OBSERVATORY OF ILLICIT ECONOMIES IN SOUTH EASTERN EUROPE

21 MAY 2025

Summary highlights

Balkan criminals involved in large-scale smuggling through Hamburg.

Criminal groups from the Western Balkans have emerged as key players in cocaine trafficking through the Port of Hamburg — Europe's third-largest container hub. Both Albanian-speaking networks and Slavic-speaking groups now coordinate sophisticated smuggling operations from South America, with well-developed systems for extracting cocaine from containers and distributing it across Europe. Despite record seizures, these criminal networks demonstrate remarkable resilience and adaptability. Although German authorities have made strides in enhancing port security, significant gaps remain in addressing corruption and in developing effective coordination with Balkan law enforcement agencies.

The internationalization of migrant smuggling through the Balkans.

The Western Balkan route has become a critical migration corridor into the European Union, with criminal networks developing sophisticated smuggling operations to facilitate movement along this route, largely from conflict zones. The smuggling landscape has become increasingly internationalized, involving diverse actors often drawn from migrant populations, including smugglers from Iraq, Syria, Afghanistan, Morocco, Algeria, Türkiye and the Netherlands collaborating across borders. Europol has established regional task forces and operational partnerships with countries along the route, but stronger measures are needed to disrupt the financial flows that sustain these networks, including improved tracing of smuggling profits and tightened regulations on informal payment systems.

Seizing crime-related virtual assets remains a challenge in the Western Balkans.

The Western Balkans face significant challenges in tracing and seizing crime-linked cryptocurrencies, despite their growing use in legitimate and criminal activities. While Serbia and Albania have established regulatory frameworks, other countries in the region lag behind with weaker oversight. Notably, only three cryptocurrency seizures cases have been documented in the region to date. The lack of comprehensive regulations, limited technical expertise and insufficient cross-border cooperation are hindering effective law



enforcement. To combat the vast crypto transactions flowing through the region, countries urgently need stronger legal frameworks, specialized training programmes, enhanced public-private partnerships with blockchain analytics firms, and improved regional cooperation mechanisms.

High hopes: Albania's path towards medical cannabis.

Albania is working towards legalizing medical cannabis cultivation through establishing regulatory frameworks and participation in international bodies. Despite the country's troubled history with illegal cannabis production, the government has created the National Agency for Cannabis Control and implemented strict security measures for legal cultivation. However, concerns remain based on North Macedonia's experience, where legally grown cannabis is being diverted to the black market and licensing procedures have faced allegations of corruption. Albania's licensing process includes significant fees and background checks, but questions persist about corruption risks and in ensuring proper use of taxation revenues from the industry.

Criminal plasticity: the growing threat of 3Dprinted weapons in South Eastern Europe.

A dangerous new threat is emerging across South Eastern Europe as criminals and violent extremists begin to exploit 3D-printing technology to manufacture untraceable, fully functional firearms known as 'ghost guns'. Although large-scale production has yet to take root in the Western Balkans, neighbouring Greece has already dismantled a sophisticated operation producing 3D-printed firearms, and similar semi-automatic weapons have appeared on Türkiye's black market. These weapons - which can be produced by anyone with a 3D printer and internet access - effectively bypass traditional firearm controls and leverage the absence of serial numbers to slip beneath law enforcement detection. The Western Balkan region, with its legacy of conflict and established arms trafficking networks, provides fertile ground for this evolving threat.

ABOUT THIS ISSUE

This issue explores five critical developments in the landscape of organized crime in the Western Balkans, ranging from cocaine smuggling to the 3D printing of firearms.

We begin by looking at the strong presence of Balkan criminal groups in Germany, and their involvement in the large-scale smuggling of cocaine from Latin America through the Port of Hamburg. For a more comprehensive insight into the activities of criminal groups from the Western Balkans trafficking cocaine to ports in Western Europe, take a look at Fatjona Mejdini's recently published report, 'Cocaine connections'.

Migrant smuggling through the Western Balkans has been a significant concern since 2015, but it continues to develop in several ways. In this Risk Bulletin, we assess recent trends, including the notable increase in the engagement of smugglers from outside the region, including those drawn from migrant populations.

Echoing a global trend, criminals throughout the Western Balkans are increasingly using cryptocurrencies for illicit transactions. In this issue, we look at the substantial challenges this creates for law enforcement, including the difficulty of seizing crime-related virtual assets. North Macedonia is one of several countries that have recently moved towards decriminalizing cannabis for medical and scientific purposes. More recently, neighbouring Albania, once considered a major source of illegally grown cannabis, has begun the process of establishing regulatory frameworks to legalize medical cannabis. We look at the possibilities and challenges, learning from some of the problems faced by North Macedonia.

Technological advancements continue to transform organized crime operations. One example is the use of 3D printers to manufacture fully functional firearms. These virtually untraceable 'ghost guns' present substantial obstacles for law enforcement efforts. The problem of 3D-printed weapons is spreading in South Eastern Europe. While large-scale production has yet to take root in the Western Balkans, the region is a vulnerable environment for this evolving threat.

If you would like to get in touch or if you have an idea for a story, please contact Vanja.Petrovic@globalinitiative.net.

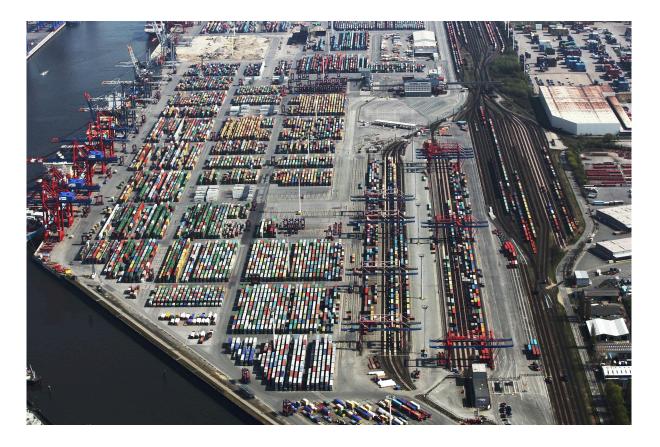
Balkan criminals involved in large-scale smuggling through Hamburg.

Hamburg, a major port city in northern Germany, serves as a key entry point for cocaine trafficked from Latin America to Europe due to its strategic geographic location and high volume of container traffic. Some of the cocaine traffic through the port is driven by Balkan criminal networks. Although German and international authorities are seeking to address the problem, enhanced efforts are required, including investment in reducing the complicity of port personnel and greater coordination with Balkan law enforcement and port authorities.

In 2023, the Port of Hamburg on the River Elbe, known as Germany's gateway to the world, handled 7.7 million containers, making it the third-largest European port by turnover.¹ That year saw German law enforcement seize a record 43 tonnes of cocaine nationwide,² including nearly 34 tonnes – almost 80% – intercepted at Hamburg's port alone.³ The number of ongoing serious and international drug investigations in the city increased to 111 in 2023, marking a nearly 30% rise compared to 2022 and setting a record.⁴

While Hamburg's significance in international cocaine trafficking is well-documented,⁵ the role of Balkan criminal networks remains relatively unexplored. These networks, comprising Albanian-speaking groups led mainly by Albanians from Albania and Kosovo and Slavicspeaking groups run primarily by Serbs and Montenegrins, are highly adept at coordinating consistent cocaine shipments from South America to Europe, relying both on Hamburg's port and the city itself.

For example, in December 2024, Montenegro's police arrested three Montenegrins accused of trafficking 509 kilograms of cocaine aboard the state-owned Montenegrin cargo ship *Budva*, reviving a high-profile



The German government reports that cocaine seizures at the Port of Hamburg – often concealed in containers – more than tripled from 9.5 tonnes in 2019 to 33.9 tonnes in 2023.

Photo: Andreas Rentz via Getty Images

case that dates back nearly five years.⁶ Cocaine was reportedly loaded in the Brazilian port of Santos, hidden among bulk sugar destined for Casablanca, Morocco. Although the sugar was offloaded in Casablanca, the cocaine remained concealed on the ship, which was seized by German police upon its arrival in Hamburg in May 2020.⁷ The suspects chose to remain silent in their defence before the Montenegrin prosecution.⁸

One of those arrested in Montenegro in December 2024, Mladen Radulović, had previously been detained in Hamburg between May and November 2020 in connection with the same case. However, he had originally been released from German custody due to wrongful detention, according to his legal team.⁹

In November 2024, Albanian authorities extradited Princ Doboshi — an ethnic Albanian from Kosovo accused of executing large-scale cocaine smuggling operations through Hamburg's port — to Germany after arresting him in Tirana.¹⁰ Hamburg prosecutors have charged him with complicity in 11 smuggling incidents involving a total of approximately 10 tonnes of cocaine, according to *Die Zeit.*¹¹ Doboshi has also been targeted by Albania's Special Prosecution against Corruption and Organized Crime (SPAK), which seized some of his assets in March 2024 on the basis that they had been funded by cocaine trafficking.¹² His criminal background dates to the 1990s.¹³

In September 2024, Hamburg police seized more than 2 tonnes of cocaine hidden in banana boxes within a shipping container near the port.¹⁴ The operation led to the arrest of 12 suspects, aged 21 to 43, from Germany, Turkey, Afghanistan, Iraq, Syria, Albania and India. Some of those arrested were already known to law enforcement for drug-related crimes.¹⁵ This seizure revealed a possible co-financing operation, designed to allow multiple groups to share the proceeds upon the cocaine's arrival at European ports, according to a researcher who specializes in tracking Albanian criminal organizations.¹⁶ Albanian groups are actively involved in such arrangements, showcasing the collaborative and transnational nature of drug trafficking operations.¹⁷

Law enforcement statistics confirm the strong presence of Balkan criminal groups in Germany. In 2022 and 2023, Albanian and Serbian citizens were among the



German police display 2 tonnes of cocaine seized at the Port of Hamburg in September 2024.

Photo: Picture Alliance via Getty Images

top five nationalities suspected of involvement in organized crime in Germany, according to the Federal Criminal Police Office.¹⁸ The number of Serbian suspects almost tripled in 2023 compared to 2022, rising from 165 to 450, while the number of Albanian suspects increased from 254 to 285.¹⁹

Law enforcement, media reports and civil society sources in Hamburg indicate that Albanian-speaking groups are perceived as more visible in Hamburg's city and port than Slavic-speaking groups. This heightened visibility is likely to be linked to their longer-established presence in the city. However, this does not necessarily indicate that Balkan criminal networks have a stronger presence in Hamburg than other national or international criminal actors. Their higher visibility could stem from their active involvement at the operational level, which makes them more exposed to law enforcement efforts, according to a researcher who closely tracks European organized crime.²⁰

Albanian-speaking groups

According to an experienced local investigative journalist, Albanian criminal networks have been present in Hamburg since the 1980s,²¹ particularly in drug trafficking and sexual exploitation. In 2023, German authorities initiated 38 criminal investigations targeting predominantly Albanian criminal groups, including 23 cases centred on cocaine trafficking and 15 involving illegal cannabis operations.²²

The ethnic Albanian criminal presence in Hamburg is thought to have begun with the Osmani clan from Kosovo, who established a foothold in the city in the 1980s.²³ By the 1990s, additional Albanian criminal groups emerged, focusing primarily on sexual exploitation, particularly in Hamburg's red-light district. By the 2000s, the Osmani clan's wealth was estimated at €100 million, including significant investments in real estate, particularly in Hamburg's red-light district, according to a local journalist.²⁴

However, alleged clan member Bashkim Osmani claims that his wealth was built purely through legitimate investments in Hamburg and later in Spain. In an interview with the Croatian newspaper *Nacional*, published in August 2007, Bashkim stated that his family built up significant wealth in Germany partly through real-estate investments and political connections.²⁵ A local investigative journalist alleged that the family's political connections in Hamburg enabled them to operate for many years below the radar of law enforcement,²⁶ which has struggled for decades to build a successful case against the Osmani clan.

However, in February 2022, Bashkim Osmani was arrested in Croatia as part of a Europol-coordinated operation involving raids across six European countries in which 45 suspects were netted on suspicion of belonging to a cocaine network linked to South America.²⁷ Important intelligence on the group's suspected operations in Hamburg and beyond was allegedly provided by the decoding of Encrochat, an encrypted messaging platform used by criminals.²⁸

The predominantly Albanian-speaking suspects are accused of smuggling tonnes of cocaine into Europe through major ports. Bashkim Osmani was transferred to Mallorca and placed in pre-trial detention, accused of membership of a criminal organization and money laundering.²⁹ However, *Majorca Daily Bulletin* reported in June 2022 that he had been released after paying €400 000 bail; his lawyer maintained in court that there was 'no evidence' against him.³⁰

A drug expert from Hamburg explained that Albanian criminals are key players in the wholesale cocaine trade alongside Turkish and Kurdish groups. 'Albanians are responsible for extracting cocaine from the port,' this expert noted.³¹ In October 2023, German police arrested three Albanian citizens in Hamburg on suspicion of involvement in large-scale cocaine trafficking.³² According to Hamburg customs and local prosecutors, the suspects worked at the port and had access to containers. During the operation, police confiscated nearly 240 kilograms of cocaine hidden in a container originating from South America.³³

Slavic-speaking groups

Unlike their Albanian counterparts, Slavic-speaking criminal groups lack a long-established presence in the city and port. Their activities in Hamburg were first observed in the 2010s, marking a newer development in the influence of Balkan criminal networks.

One of the earliest cases uncovered by law enforcement linking Slavic groups, cocaine trafficking and the Port of Hamburg dates from 2019 and involves Petar Ćosić, also known as Šarac, a Croatian national. Ćosić, a former special forces officer, has been a central figure in the Balkan drug trade and a trusted associate of Darko Šarić.³⁴ 'Their connection reportedly dates to their military service together in 1989, highlighting a partnership built on decades of trust,' explained an experienced crime reporter from Croatia.³⁵

Šarić, from Montenegro and the holder of a Serbian passport, ran an extensive network smuggling cocaine from South America to Europe. In November 2020, a Serbian appeals court confirmed a prison term of 15 years handed to Šarić two years earlier for his role in trafficking 5.7 tonnes of cocaine in 2008 and 2009.³⁶ Ćosić managed logistics and oversaw drug distribution for Šarić, particularly in Croatia. In 2011, Ćosić was apprehended during Operation Dogma for smuggling at least 368 kilograms of cocaine,³⁷ and subsequently sentenced to four years in prison.³⁸ Croatia, Montenegro and Serbia were central to their operations, serving as critical hubs for moving cocaine into Europe and money laundering. Their collaboration underscores the strategic exploitation of regional vulnerabilities by Balkan criminal networks.

The link between Ćosić and the Port of Hamburg can be traced back to December 2019. Croatian prosecutors alleged in April 2023 that Čosić had overseen a shipment of 1 tonne of cocaine, moving the drugs from Colombia through Ecuador to Europe.³⁹ At the Port of Guayaquil in Ecuador, 500 kilograms of the cocaine were concealed in a shipping container aboard the MSC *Zlata R* and transported to Europe via Antwerp and Hamburg.

Efforts to extract this cocaine in Antwerp were unsuccessful, prompting traffickers to transfer the container to the *Joanna* for onward movement to Hamburg. Upon the cocaine's arrival in Hamburg, criminals accessed the container after it left the port and successfully extracted the cocaine. Of the 500 kilograms, 350 were sold for around €28 000 per kilogram. The remaining 150 kilograms were reportedly kept as payment in kind by the operatives who extracted the consignment at Hamburg port.⁴⁰

Another alleged key player on the Slavic side of the Balkan criminal networks is the Tito and Dino cartel, led by Edin Gačanin, a citizen of Bosnia and Herzegovina who holds a Dutch passport.⁴¹ Dutch prosecutors suspect this cartel of facilitating the smuggling in 2020 of approximately 1.8 tonnes of cocaine through Hamburg port, with the Netherlands as the ultimate destination.⁴² The US government has identified Gačanin as one of the world's top drug traffickers.⁴³ His group maintained strong alliances with other major criminal organizations, including the Kinahan group from Ireland and the Dutch-Moroccan 'Mocro' mafia,⁴⁴ solidifying its influence across Europe and beyond.

Hamburg has also been highlighted in a case linked to Montenegro as a costly entry point for cocaine shipments from South America to Europe. Intercepted encrypted communications on the Sky ECC platform allegedly revealed that Radoje Zvicer, the suspected leader of the Kavač clan — one of Montenegro's most powerful criminal organizations — discussed his connections in Hamburg as an option for extracting cocaine from the port. However, Zvicer reportedly expressed concerns over the high cost, stating that the associates in Hamburg demanded 25% of the cocaine shipment's total value, which he purportedly deemed excessive.⁴⁵

The Port of Hamburg is undeniably a critical hub for cocaine trafficking into Europe, attracting a range of criminal networks due to its strategic location and high profit margins. While Balkan criminal groups are deeply involved in the port and city, they are not known for violent methods in Hamburg,⁴⁶ according to law enforcement in the city. Instead, they discreetly focus on sophisticated logistics and strategic partnerships to facilitate drug smuggling and distribution. 'Currently, active criminal organizations in Hamburg are more multinational,' a law enforcement operative on the river Elbe explained.⁴⁷

Acknowledging problems

Authorities in Hamburg in January 2024 joined the European Ports Alliance, an initiative to enhance security across EU ports.⁴⁸ The alliance focuses on improving customs efficiency in the scanning of containers and inspection of imports, alongside targeted law enforcement operations in ports. It also fosters cooperation, by promoting public–private partnerships to support port authorities and shipping companies, alongside protecting logistics, information, personnel and operational processes.⁴⁹

In May 2024, Hamburg authorities launched the Port Security Centre to enhance oversight and combat organized crime within the port.⁵⁰ Developed with the collaboration of police, customs and prosecutors, it facilitates the exchange of information and identifies suspicious activity patterns at an early stage. A whistleblower portal has been introduced to support these efforts, enabling port employees to report suspicious activities anonymously. Additionally, authorities conducted a public awareness campaign to educate port workers about the dangers of criminal recruitment.⁵¹

Also in May 2024, Hamburg hosted a ministerial meeting of the Coalition of European countries against serious and organized crime, bringing together ministers from Germany, Belgium, the Netherlands and France, as well as representatives from Latin America. Sweden joined the coalition as a new member.

A key outcome of the meeting was the adoption of the Hamburg Declaration, a three-pronged strategy that seeks to disrupt upstream cocaine supplies at or near source in South America; enhance collaboration among customs, law enforcement and private sector operators active in and responsible for European ports; and improve cross-border cooperation by law enforcement to disrupt and dismantle criminal networks' financial operations.⁵²

German authorities noted a decrease in cocaine seizures at the Port of Hamburg in the first half of 2024.⁵³ While this could indicate reduced cocaine inflows into Hamburg, it may also reflect drug trafficking organizations adopting more sophisticated concealment methods in response to heightened security measures. Despite these changes, the availability and price of cocaine, including in Hamburg, have remained stable,⁵⁴ suggesting the continued resilience of trafficking networks.

Persisting policy gaps

More targeted measures are essential to combat Balkan criminal groups' infiltration effectively, particularly in

addressing corruption risks and bolstering European ports' security. The vulnerabilities of port workers to criminal recruitment remain insufficiently addressed, since current efforts are limited to general guidelines rather than actionable strategies. These measures could include establishing a partnership with the Maritime Anti-Corruption Network,⁵⁵ an award-winning, industryled initiative that represents more than 50% of global shipping tonnage and collaborates with governments and civil society.

While the need to trace and confiscate virtual assets purchased with criminal profits has been acknowledged in the Hamburg Declaration, there are insufficient tactical responses to counter the mobility and adaptability of criminal networks, including those from the Balkans, which often exploit weak enforcement points.

Greater attention is also needed on the role of intermediaries, such as Balkan groups that manage logistics in Europe and their connection to source countries. Collaboration between West European and Balkan law enforcement and port authorities to intercept drugs before they reach European ports is underdeveloped and requires significant improvement. For example, none of the ports in the Balkans are part of the European Ports Alliance, leaving a gap in the coordination of efforts. This is important since the maritime Balkan route brings cocaine from Latin America and heroin via Türkiye and the Middle East into the Balkans through major commercial ports in the Adriatic, Aegean, Black and Ionian seas.⁵⁶

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The internationalization of migrant smuggling through the Balkans.

Migrant smuggling has evolved into a complex transnational criminal enterprise, with the Western Balkan route emerging as a critical pathway to the European Union. The phenomenon reveals the 'glocal' nature of organized crime: global flows of people moved by transnational networks exploiting local conditions and enablers to generate millions of euros in profits. While the continued improvement in collaboration between law enforcement agencies is encouraging, such efforts need to be significantly intensified, particularly with regard to the identification and seizure of criminal proceeds from human trafficking.

Europol's latest Serious and Organised Crime Threat Assessment (SOCTA), published in March 2025, has identified the Western Balkan route as one of two primary migration corridors into the European Union. Criminal networks have developed sophisticated methods to facilitate migrant movements along this route, either by guiding migrants across borders or by providing remote instructions. Irregular migrants are transported in a variety of passenger and commercial vehicles, often hidden in fuel tanks, between truck compartments or among goods.¹

Countries on the Western Balkan migrant route are particularly vulnerable to this illicit activity. Serbia, Montenegro, Bosnia and Herzegovina, and Croatia have become critical transit points, with criminal groups leveraging several strategic advantages. These networks benefit from pre-existing criminal connections, extensive knowledge of the local terrain, and corruption within law enforcement agencies.

Estimates by Europol, Frontex and other international agencies at the forefront of dealing with migration issues indicate that migrant smuggling is on the rise. What distinguishes the current landscape is the increasing



Migrants hide in the fields outside of Subotica, Serbia, while they make arrangements with smugglers or find routes into Hungary, an entrance to the European Union.

Photo: Jodi Hilton/NurPhoto via Getty Images

involvement of diverse international actors, often drawn from migrant populations. Criminal groups now include smugglers from Iraq, Syria, Afghanistan, Morocco, Algeria, Türkiye and the Netherlands, who collaborate across borders to coordinate the movement of migrants from conflict zones to Europe.² The arrest of a Dutch-Iraqi alleged human trafficker in Bosnia and Herzegovina in May 2024 provides one such example.³

More significantly, the recent dismantling of an alleged migrant smuggling ring in Bulgaria, which led to the arrest of eight people, indicates the crucial role of foreign actors in orchestrating illicit operations along the Balkan route. The network, run by Syrian and Jordanian nationals, operated with considerable sophistication, coordinating the transit of migrants from Türkiye into Bulgaria and further into Europe, charging up to €6 000 per person to be smuggled to Bosnia and Herzegovina, and €4 000 more to be transported to Serbia. These foreign operatives allegedly worked alongside Bulgarian accomplices to facilitate transportation and logistics, demonstrating the collaboration of local and international actors in enhancing operational reach. The network also recruited drivers from Moldova.⁴

In November 2024, a German-led EU operation dismantled a major suspected criminal network, which had since 2021 allegedly engaged in migrant smuggling, arms trafficking and document fraud along the Balkan route. Supported by Europol and authorities from various European countries, including Austria, Bosnia and Herzegovina, Germany and the Netherlands, the investigation led to 25 arrests (including six in Serbia and three in Bosnia and Herzegovina). Three high-value targets were among those arrested. One suspect, an Iraqi believed to lead a related smuggling network, was arrested in the UK under a European arrest warrant from Poland.⁵ The group operated in 20 countries, subcontracting local groups for the transport and accommodation of migrants, primarily Syrians, to final destinations mainly in Germany, the Netherlands and the UK.⁶ The network was also allegedly violent towards migrants and aggressive in protecting its criminal market share, reportedly charging €4 500 to €12 000 per person. Both migrants and smugglers used hawala in Türkiye for money transfers. International law enforcement cooperation revealed a network responsible for facilitating the illicit transport of 750 migrants, but further investigations suggest as many as 2 200 may have been smuggled into Germany, generating more than €3.4 million in illegal profits.

Russians, Belarussians, Ukrainians and other Eastern Europeans are frequently recruited as drivers, exploiting their familiarity with the region's routes and their ability to blend in.⁸ Arrests in January 2024 in Bosnia and Herzegovina highlight how these foreigners were employed as drivers in operations smuggling migrants.⁹ These individuals also serve as intermediaries, offering accommodation, forged documents and access to bribery networks to facilitate transit. Interestingly, smuggling networks own private companies abroad (including import–export and car rental companies), which they use to interact with other car rental companies in the region, creating a facade to obscure the identity of the renter and their intentions. This ultimately facilitates the use of these vehicles for smuggling migrants.¹⁰

These foreign actors often collaborate with Balkan smugglers to navigate complex borders. For example, coordinated actions between foreign and local groups were crucial in smuggling operations dismantled in Bosnia and Herzegovina in early 2024.¹¹ In November the same year, police from the State Agency for Investigation and Protection conducted a search in Sarajevo and arrested an Afghan citizen on suspicion of human smuggling and organizing a criminal group for this purpose. Since July 2024, the suspected criminal group that the arrested individual allegedly worked for had smuggled more than 250 illegal migrants, primarily of Turkish or Kurdish origin, and unlawfully earned more than €100 000, according to state prosecutors.¹²

Additionally, Turkish smugglers possess expertise in forging Bulgarian passports, with the quality of the forgeries varying based on price, ranging from ≤ 1500 to ≤ 5000 . These passports have been used for passing through the Balkan route.¹³

At least 150 migrants are estimated to cross into Serbia daily through illegal border crossings.¹⁴ Data from Serbian police shows that after an intensive operation against smuggling and irregular migration in 2024, attempts via (and migrant numbers in) the north have significantly decreased, while many reception centres have been shut down.¹⁵ Deputy Prime Minister Ivica Dačić confirmed the arrest of six members of an organized criminal group suspected of human smuggling during the Europol operation in November 2024, after a months-long international investigation. Supported by Europol, the probe — which dismantled a suspected smuggling network allegedly run by Syrians — also involved police from Bosnia and Herzegovina, the UK and EU countries.¹⁶

Foreign smugglers are increasingly present in Croatia, directly linked to smuggling operations from the Western Balkan region. More than 10% of all prisoners in Croatia are convicted of offences related to migrant smuggling, among them foreign nationals, including individuals from Bosnia and Herzegovina, Ukraine, Moldova, Georgia, China and India.¹⁷

Modalities of payment for smuggling

Between 1 January and 15 November 2024, the International Organization for Migration (IOM) interviewed 12 817 migrants in Bosnia and Herzegovina, Serbia, Montenegro, North Macedonia, Kosovo and Albania. Approximately 40% of interviewees reported being accompanied by individuals who facilitated at least one border crossing into a Western Balkan country. Smuggling costs and itineraries vary, with most migrants opting for multi-border 'package' deals in North Macedonia and Serbia, while single-border payments are more common for entry into Bosnia and Herzegovina.¹⁸

Figure 1 shows prices for the most frequently mentioned packages. Istanbul serves as the primary hub from which migrants enter the Western Balkans.¹⁹

Migrants employ various payment methods for smuggling services. One common arrangement involves migrants paying for specific GPS coordinates that enable them to cross the border irregularly. Once they have successfully crossed, they receive a message containing new instructions and coordinates for the next stage of their journey. Another arrangement sees migrants pay facilitators who accompany them. In this case, the migrants are led to designated border crossings. Upon arriving at locations on the other side, they meet new individuals who offer accommodation and guidance about the subsequent steps in their journey.²⁰

Strengthening partnerships to combat migrant smuggling

Europol has been closely monitoring the rise in migrant smuggling and the increasing involvement of organized criminal groups in this illicit activity, particularly those led by nationals from countries of origin. To tackle this criminal phenomenon through coordinated efforts, in March 2023 Europol established a regional task force that includes Bosnia and Herzegovina, Croatia, Germany and Slovenia. The task force is dedicated to combating the criminal networks operating along the main migration routes in the Western Balkans.²¹ In 2023, German authorities also reached out to Eurojust for assistance in fostering judicial cooperation among countries participating in the task force and to establish a Joint Investigation Team (JIT) composed of representatives from Germany, Poland, Serbia and Bosnia and Herzegovina, with Austria serving as an operational partner. Additionally, Eurojust established a coordination centre at its headquarters to support the task force and facilitate direct communication among all authorities involved.²²

In April 2024, Europol formed its own Operational Taskforce to smooth collaboration with Austria, Bosnia and Herzegovina, Germany, the Netherlands, Poland, Serbia, the UK and several other European nations. Europol experts analyzed intelligence pooled by this task force to clarify the structure of criminal activities and identify individuals involved in smuggling and related financial operations.²³

Route	Average cost per person			
Multi-country routes				
Turkey \rightarrow Bulgaria \rightarrow Serbia	€3 468			
Greece \rightarrow North Macedonia \rightarrow Serbia	€1 033			
Syrian Arab Republic \rightarrow Germany	€12 600			
Single border crossings				
Montenegro → Bosnia and Herzegovina	€315			
Serbia \rightarrow Bosnia and Herzegovina	€235			

FIGURE 1 Prices of smuggling itineraries through the Western Balkans.

Source: Interview with an IOM representative, Sarajevo, 12 December 2024

In December 2024, Bosnia and Herzegovina initialled an agreement with the European Union to enhance migration management by deploying Frontex officers on its territory. This agreement, which is anticipated to be officially signed later this year,²⁴ cements the country's role as a vital operational partner in regional and European migration management, representing a crucial step toward more effective and collaborative solutions.

The coordinated efforts of Europol, Eurojust and national authorities highlight the growing importance of a unified approach to combat migrant smuggling, particularly in terms of addressing the role played by organized criminal groups. Establishing operational task forces and joint investigation teams, along with enhanced partnerships with countries such as Bosnia and Herzegovina, has led to significant progress in disrupting criminal networks that operate along key migration routes. In a further effort to enhance collaboration in combating human trafficking, Bosnia and Herzegovina signed a cooperation agreement with the European Union in October 2024 that enables Bosnia and Herzegovina to post a liaison prosecutor to Eurojust, the EU's criminal justice cooperation.²⁵ To sustain this momentum, deeper research into emerging trends and developments in migrant smuggling is vital, to ensure strategies remain responsive to the evolving tactics of criminal networks.

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The role of foreign actors and the complexity of financial systems underscore the persistent transnational security threat posed by migrant smuggling. In 2024, international law enforcement cooperation led to a significant number of arrests; however, smuggling networks have proven highly adaptive. This situation indicates that long-term strategic countermeasures are necessary, rather than relying solely on short-term crackdowns.

To weaken this illicit market effectively, authorities must focus on disrupting illicit financial flows instead of prioritizing arrests alone. Essential actions include tracking and seizing smuggling profits, enhancing cooperation for financial intelligence sharing, and tightening regulations on informal payment systems like *hawala* and underground banking networks.

Establishing joint financial task forces, improving sanctions against enablers and reinforcing anti-money laundering frameworks are also crucial strategies. Collectively, these measures will help reduce the economic incentives that sustain smuggling networks. Without a consistent focus on financial disruption, the profitability of migrant smuggling will continue to threaten security in the EU and the Western Balkans.

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Seizing crime-related virtual assets remains a challenge in the Western Balkans.

Cryptocurrencies have become a double-edged sword in the Western Balkans, facilitating both legitimate economic activity and criminal enterprises. While Serbia and Albania have made significant strides in regulating virtual assets, other countries in the region still face considerable challenges in tracking and seizing crimelinked cryptocurrencies. The lack of comprehensive regulations, limited technical expertise and insufficient cross-border cooperation have resulted in only three documented cases of crypto asset seizures in the entire region. To effectively combat the growing threat of crypto-related crime, Western Balkan countries urgently need to strengthen their legal frameworks, invest in specialized training, foster public-private partnerships and enhance regional cooperation. Cryptocurrencies are increasingly prevalent in both legal and illegal markets across the Western Balkans. In 2023, approximately 240 000 people in the region - primarily in Serbia – owned cryptocurrency,¹ with transaction volumes estimated at between US\$25 billion and US\$30 billion.² While crypto-related crime was once isolated, it has now become a sophisticated tool for criminal networks.³ Within the region, Montenegro has emerged as a major European hub for cryptocurrency use on darknet markets, while Albania, North Macedonia and Serbia have all experienced substantial increases in usage.⁴ The range of criminal activities has also expanded to include money laundering, fraud and illegal crypto mining.⁵ In one notable case, a major drug trafficker from Bosnia and Herzegovina invested directly in a crypto company, highlighting the growing intersection between traditional organized crime and digital finance.⁶

Retention					
\$ 93.94K		and the second	DAILY TURNOVER	MONTHLY TURNOVER MON	THLY WITHDRAWA
TOTAL TRADE BOOM TODAY BROKER NAM	e DAILY NET DEPOSITS \$ 13,574	O \$ 32,995	\$ 0	⊘ \$ 2,345,532,532	\$ 680
27M \$7.03B	\$ 3,199	O \$ 42,605	\$0	0 \$ 61,620	\$ 5,383
	\$ 1,721	0 \$ 11,593	\$0	0 \$ 38	\$ 1,483
	\$0	O \$ 11,668	\$0	O \$ 203,916	\$ 422
5	\$0	O \$ 10,836	\$ 11,740,685	0 \$ 56,834,637	\$ 183
	\$0	O \$ 810	\$0	\$ 100,279,624	\$ 200
V	\$ -100	0 \$ 145,444	\$0	0 \$ 16,358	\$776
	-5,000	0 \$ 2,414	\$0	0 \$ 383,336	\$ 6,750
Total	\$ 13,394	\$ 258,369	\$ 11,740,685	\$ 2,503,312,064	¢ 15 977

Unlike real brokerage firms that display stock market movements, call centres in Serbia that ran fake crypto investments ranked agents based on their success in scamming victims.

Photo: Ministry of Interior of the Republic of Serbia via N1 Belgrade

The seizure and confiscation of criminal proceeds is an essential strategy in the fight against organized crime. Asset seizure temporarily prevents criminal suspects from accessing or transferring their property pending a final court decision, thus ensuring that illicit gains remain available for potential confiscation. Once finalized, confiscation permanently deprives criminals of these assets and can help disrupt criminal groups by cutting off their financial resources and preventing reinvestment in further illegal activities.⁷

While some countries in the Western Balkans, including Albania, Kosovo, North Macedonia and Serbia,⁸ have made progress in confiscating traditional criminal assets such as cash and real estate, Bosnia and Herzegovina and Montenegro are still struggling with basic asset recovery.⁹ The seizing of virtual assets, however, is even more complex due to the speed of transactions, the challenges of tracing ownership, their borderless nature and regulatory gaps. These difficulties are particularly pronounced in the Western Balkans, where many countries lack comprehensive regulatory frameworks and the technical expertise necessary for effective cryptocurrency oversight.¹⁰

CASES OF VIRTUAL ASSET SEIZURES IN THE WESTERN BALKANS

Successful seizures of virtual assets remain exceptionally rare across the region, with only three documented cases to date. One of these cases involved an Albanian organized crime group engaged in drug trafficking and theft. Albanian law enforcement, working with counterparts from Belgium, the Netherlands, Spain and Europol, conducted an operation against this group between November 2024 and January 2025. They seized cash, bank accounts and properties belonging to the group, including wallets containing US\$10 million in crypto assets. A global stablecoin management company and a major international cryptocurrency exchange also assisted law enforcement in carrying out the operation.¹¹

Another case comes from Serbia, where between 2021 and 2023 a multinational law enforcement operation led by Germany, Bulgaria, Cyprus and Serbia, and coordinated by Europol and Eurojust — dismantled a network that had defrauded 127 000 victims through fake crypto investment schemes.¹² The network operated call centres from Serbia, relied on Bulgaria for technical support and allegedly laundered proceeds through Cyprus.¹³ In January 2023, law enforcement seized several wallets containing a combined US\$1 million in crypto assets.¹⁴

There are also indications that crypto assets linked to an international drug trafficking organization were seized and stored in Bosnia and Herzegovina in 2023. According to a court official in Sarajevo,¹⁵ court files suggest that judicial authorities seized crypto and ordered its conversion into fiat currency, reducing the risks of holding volatile digital assets, with the central bank as trusted institutions with the infrastructure to securely manage assets, reportedly involved in opening a wallet for the case.¹⁶

Current practices for seizing crypto assets in the Western Balkans rely heavily on international law enforcement cooperation, in particular through agreements with Europol and Eurojust, which provide a legal framework for cross-border investigations. Public-private partnerships have also played a crucial role in tracing crypto assets. However, significant challenges remain. The region faces legal gaps, limited human resources and insufficient technical expertise to effectively trace crypto assets across decentralized and pseudonymized transactions, making the seizure and confiscation difficult.

Seizure and confiscation gaps

The Western Balkans lack a strong legal framework for confiscating cryptocurrencies linked to criminal activity,

although Serbia has made some progress in this regard. According to a senior expert on organized crime, in Serbia it is possible to seize crypto assets by following general criminal procedures and obtaining a judge's approval.¹⁷ Serbia has also developed a handbook on the handling of electronic evidence, which provides a step-by-step procedure for the seizure of cryptocurrencies.¹⁸ Although procedures are not legally binding, the handbook guides police officers, prosecutors and judges through procedural and technical steps in crypto investigations based on INTERPOL and Council of Europe standards. Serbia's interior ministry also has a dedicated chapter on cryptocurrencies in its standard operating procedures.¹⁹

The lack of regulation on virtual asset confiscation in the Western Balkans is not unexpected, as only three out of six countries in the region have adopted specific laws on cryptocurrencies. Albania and Serbia were the first to introduce dedicated legal frameworks: Albania passed a law on financial markets based on distributed ledger technology in May 2020,²⁰ while Serbia adopted a law on digital assets in December the same year.²¹ In November 2024, Kosovo also introduced a law on crypto assets,²² but implementation has yet to begin as the bylaws are still pending adoption.²³

Other Western Balkan countries have regulated virtual assets in a limited way through amendments to existing laws. North Macedonia updated its anti-money laundering laws to include virtual assets in July 2022.²⁴ In Bosnia and Herzegovina, only the Republic of Srpska has introduced crypto-related regulations, which it did by amending the law on securities in 2022.²⁵

Montenegro does not directly regulate crypto assets, but its financial intelligence authority has clarified in 2024 that the country's anti-money laundering legislation requires monitoring of crypto wallet transactions.²⁶

As highlighted in the Global Crypto Adoption Index 2024, the enforcement of crypto-related regulation is inconsistent across the Western Balkans.²⁷ The index, which ranks 151 countries, shows significant differences within the region. Serbia ranks the highest (49th), indicating a more active crypto market with greater public and private engagement. In contrast, Albania (109th) and Montenegro (127th) show minimal adoption, suggesting a smaller market or weaker regulatory frameworks. Bosnia and Herzegovina (81st) and North Macedonia (98th) fall in the middle, suggesting moderate levels of crypto use.²⁸

Legally, Montenegro and Bosnia and Herzegovina (at the entity level) have the weakest crypto regulatory frameworks in the region. This is particularly challenging for Montenegro, which tends to offer favourable taxation regimes for cryptocurrency investments, positioning itself as a potential crypto haven. However, without adequate regulation and oversight, this approach carries significant organized crime risks.²⁹

On the other hand, Bosnia and Herzegovina's first national threat assessment on virtual assets found that crime-related cryptocurrency transactions were minimal,³⁰ but this may be underreported due to limited investigative tools and regulatory oversight. Despite the low number of reported cases, Bosnia and Herzegovina remains vulnerable to money laundering

Country (entity)	Strength of regulatory framework	Formed crypto asset seizure managing unit	Established public-private partnership	Documented crypto seizures
Albania	Moderate	No	Yes	Yes
Bosnia and Herzegovina	Weak	No	No	Yes
Kosovo	Weak	No	No	No
Montenegro	Weak	No	No	No
North Macedonia	Weak	No	No	No
Serbia	Strong	No	Yes	Yes

FIGURE 1 Comparative review of crime-related crypto asset seizure and confiscation capacities in the Western Balkans.

Sources: Responses from state property and seized asset management agencies in Bosnia and Herzegovina, Montenegro and North Macedonia,³² and GI-TOC analysis

using cryptocurrencies, driven by weak institutional oversight, limited technical expertise and fragmented inter-agency cooperation.³¹

The varying levels of cryptocurrency regulation and enforcement in the Western Balkans reflect differences in national priorities, human capacity and technical expertise. In Bosnia and Herzegovina, for example, in addition to an underdeveloped legal framework for asset seizure, the agency responsible for asset management does not have a dedicated blockchain team.³³ The lack of human resources limits its ability to handle cryptorelated cases. North Macedonia faces similar challenges,³⁴ although the government has promised regulation of virtual assets by 2026.³⁵

Public-private partnerships to combat crypto-related crime remain underdeveloped in the region, largely due to low financial literacy and limited technological expertise among regulators.³⁶ Serbia and Albania are exceptions, where authorities have established cooperation with blockchain analytics firms and cryptocurrency exchanges, which has contributed to the seizure of virtual assets. Notably, Serbia's interior ministry has included a subscription to a blockchain analytics platform in its budget plan, aiming to improve its ability to trace and confiscate illicit crypto assets.³⁷

While the region has limited experience in addressing crypto-related crimes, countries with stronger legal frameworks and established public-private partnerships have been more effective in seizing virtual assets (see Figure 1). However, no cases of accomplished confiscation have been identified so far, highlighting the need for improvement.

The way forward

The Western Balkans could begin to address these vulnerabilities by establishing a clear legal structure for the seizure of crypto assets, including detailed technical procedures for confiscating and managing crime-linked cryptocurrencies. Montenegro's property management authority recognizes the need for regulatory improvements and suggests that clear asset management procedures for cryptocurrencies should be defined.³⁸ Serbia should also proceed with its planned amendments to virtual asset regulations. These would establish a process for administering seized assets within the justice ministry. Upon receiving a confiscation decision from a prosecutor or court, the justice ministry

would transfer digital assets to a secure wallet managed by the interior ministry. $^{39}\,$

A senior organized crime expert stressed the need for training programmes for police, prosecutors and judges in digital forensics, blockchain investigations and asset management.⁴⁰ Some progress has already been made in this area. For example, in September 2024, the Balkan Asset Management Interagency Network (BAMIN) – a group of practitioners working on criminal asset management and disposal in the region – trained 24 practitioners from the Western Balkans on the legal frameworks, investigative techniques and practical strategies for seizing and managing digital assets.⁴¹

Enhancing public-private cooperation and regional cooperation is important for enforcement and asset recovery in the Western Balkans. Officials responsible for managing state property and seized assets have pointed out that the lack of coordination in the region reduces the chances of recovering laundered funds through global exchanges.⁴²

Public authorities, blockchain analytics firms and civil society organizations should also strengthen collaboration to facilitate crypto tracing and improve asset recovery efforts. The upcoming Digital Forensics Conference in Belgrade, Serbia, which brings together experts in blockchain forensics and cybercrime investigations, could be a valuable platform for discussing crypto asset seizures.⁴³

Practice in Croatia, a neighbouring country with legal and institutional structures similar to those in the Western Balkans, offers a model for improving crypto asset seizure procedures. A key recommendation is to legally empower the police to issue orders to secure and seize unlawfully obtained crypto assets.⁴⁴ Police should establish dedicated crypto wallets to store seized funds on a case-by-case basis, depending on the suspected offence. A joint directive between the police and prosecution should set out procedures for creating and managing crypto wallets, ensuring that, where legal requirements are met, police officers can securely transfer and store confiscated funds in a police-controlled account.⁴⁵ After the transfer, the police must prepare a detailed report outlining the funds transferred, the destination addresses and the seed phrase (a randomly generated passkey used in account recovery). This report must be sealed and submitted to the relevant public prosecutor, ensuring

transparency and accountability in the management of confiscated digital assets.⁴⁶

The International Organization of Securities Commissions, a global standard-setter for securities regulation, has also provided useful policy suggestions

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for crypto and digital asset markets that can guide policymakers and practitioners in the Western Balkans.⁴⁷ Without reforms, criminals, particularly those using cryptocurrencies for money laundering, fraud and illicit financial flows, will continue exploiting the weaknesses in asset recovery frameworks.

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High hopes: Albania's path towards medical cannabis.

Albania is on a path towards legalizing the cultivation of cannabis for medical purposes, signalled by incremental steps including establishing a national regulatory body, approving a legal framework and joining an international regulatory body. While these developments are encouraging, the government would do well to heed lessons from North Macedonia, where licences allegedly ultimately benefited politically exposed persons and legally grown cannabis has been diverted to the illicit recreational market. A robust framework is crucial, given that Albanian criminal groups have historically had a significant hand in the illegal cannabis trade.

Historically, Albania earned a bad reputation for being a major source of cannabis in the Western Balkans. Indeed, cannabis has been a substantial illicit market in the country, generating a lucrative source of revenue for criminal groups. The authorities began to get a grip on the problem back in 2014, when police and special forces engaged in a lengthy gun battle with local mafia in the village of Lazarat in the south of the country, the epicentre of illegal cultivation.¹

After that crackdown, cannabis cultivation became smaller scale and more diffused, moving from large fields in the south of the country to smaller plots in the mountainous regions in the north as well as to indoor cultivation. Some Albanian cannabis growers upped sticks and took their illicit skills to the Netherlands, Spain and the United Kingdom.

Given this historical context, it came as something of a surprise when Prime Minister Edi Rama announced in May 2020 that the government was preparing a draft law that would legalize the cultivation of cannabis for medicinal purposes. Subsequently, parliament in July 2023 approved a law setting out an initial framework for legal cannabis cultivation and Albania created a National Agency for Cannabis Control (NACC) in 2023.²



A police operation in Lazarat in 2014 effectively marked the start of Albania's crackdown on the illicit cannabis trade. Photo: Albanian Interior Ministry/Anadolu Agency/Getty Images

Most recently, in November 2024, the national agency has joined the Cannabis Regulators Association (CANNRA), a non-partisan, non-profit organization that comprises government agencies involved in regulating cannabis, cannabinoids and hemp in more than 45 US states, as well as in Canada, the Netherlands and Malta. The association connects governments working on the implementation of cannabis and hemp policies, and promotes learning, collaboration and coordination.³

This considered, incremental approach is encouraging. It has been informed by Rama making clear from the very beginning that the government would coordinate closely with foreign and local advisers. He also emphasized the importance of learning from other countries' experiences with medical cannabis.⁴

The legal cultivation of cannabis seeks to attract foreign investment and diversify the economy. However, the country's historical problems with illegal cannabis cultivation in relation to organized crime raises clear concerns about oversight and implementation.⁵

Lessons from North Macedonia

One major concern is the potential for diversion of legally grown cannabis onto the black market. There are lessons to be learned, not least from the experience of North Macedonia, where the cultivation and export of medical cannabis was approved in 2016.

On several documented occasions legally produced cannabis in North Macedonia ended up being sold in significant quantities on the illicit market.⁶ Authorities have conducted several operations against licensed companies suspected of regulatory breaches and illicit distribution, highlighting the need for stringent oversight to prevent the misuse of legally produced cannabis.⁷

Another major risk is that of corruption in issuing licences. There are allegations that ruling parties in North Macedonia tended to favour associates when granting licences and that the tender process attracted controversial businessmen (i.e. those with significant criminal convictions) from at home and abroad.⁸

There is also criticism that too many licences were issued; nearly 70 cannabis companies were registered by March 2024, despite a limited market for medicinal cannabis in North Macedonia.⁹ There is currently no intention to limit the number of licences issued.

Albania's initial steps: a good start?

It is clear that Albania's government has given considerable thought to the danger of illegal diversion. Countering such efforts come under the purview of the above-mentioned National Agency for Cannabis Control, a public, budget-financed legal entity under the authority of the health ministry.

Its mission is to oversee, control and inspect the cultivation and processing of the cannabis plant and the production of its by-products for medical and industrial purposes, as well as to monitor the implementation of the July 2023 law.¹⁰ In April 2024, the government approved the agency's structure, which consists of a director-general, a coordinator and four directorates.¹¹

Several by-laws and regulations have been approved and published by the Albanian government; others are being finalized. Regulations stipulate that cultivation may be carried out in protected farmland, in greenhouses or plastic tunnels, and in enclosed facilities equipped with artificial lighting.

If cultivation takes place in open areas, it will be mandatory for the exterior to be protected by a stable concrete wall that is at least 4 metres high and 25 centimetres thick (and topped by barbed wire). The premises must be monitored by high-quality cameras and guarded 24/7 by authorized security personnel.¹²

Additionally, the use of high-tech electronic security devices (such as detectors and control gates) will be required, while the alarm signal must be linked to a police station and the command centre.¹³ The licensed entity must also grant the National Agency for Cannabis Control access to cameras in their compounds, to ensure independent monitoring.¹⁴

The transport of the cannabis and by-products must be carried out in sealed vehicles that ensure the product is not tampered with. Every time a licensed entity wants to transport legal cannabis products from one place to another, it must inform the National Register of Licensed and Permitted Cannabis Activities and the State Police at least five days in advance. Meanwhile, storage is entrusted to private security companies or the state-owned Illyrian Guard security company; these companies will be required to maintain a continuous 24-hour security presence.¹⁵

The licensing process has yet to begin,¹⁶ but licences will no doubt be highly sought after.

While North Macedonia's medical cannabis industry has struggled due to limited domestic demand and export barriers, Albania may be perceived differently by investors thanks to its agricultural climate, lower production costs and pro-business government narrative. If Albania succeeds in ensuring regulatory clarity and securing export markets — especially to EU countries where demand is surging — the industry could become highly lucrative.

Applying for a licence will cost around €1 000. After the third year, licence holders will pay an annual fee of 1.5% of their turnover to the government, but no less than €100 000. A licence to produce medical cannabis will be issued for a 15-year period, with the option of renewal upon request. The total allowable area for the cultivation of cannabis for medical purposes cannot exceed 200 hectares nationwide.¹⁷ According to the legislation and regulations, applicants must not be under investigation or have been convicted of a serious criminal offence, must not be a drug user, and must undergo additional background checks.¹⁸

However, this might not be enough to address concerns about the potential for the process of granting licences to be corrupted. In terms of resilience to organized

Notes

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- 6 Observatory of Illicit Economies in South Eastern Europe, The legalized medical cannabis business in North Macedonia is at risk of criminal diversion, Risk Bulletin, Issue 19, GI-TOC, August 2024.
- 7 Ibid.
- 8 Interview with Janaki Mitrevski, a lawyer based in North Macedonia.

crime, Albania is ranked 84th globally in the GI-TOC's Global Organized Crime Index, below North Macedonia in 73rd place, indicating that the integrity of Albania's licence acquisitions could be even more open to exploitation by politically connected players.¹⁹

Revenue generated from issuing the licences will go into the state budget, while the revenue from the annual fee paid by licensed entities will be distributed 70:30 between the state budget and the NACC.²⁰

Another challenge will be to ensure that increased tax revenues from legal cannabis are not just seen as a cash cow but are used to improve the healthcare system, particularly in terms of patient treatment and social support.²¹ This will require enhanced transparency in revenue management and closer cooperation between the relevant ministries and other stakeholders such as civil society.

In short, the Albanian authorities should take heed from North Macedonia's experience in establishing a regulatory framework for medical cannabis. While there is clear evidence that significant thought has gone into preventing illegal diversion of legally grown cannabis onto the black market, there is concern about the risk of corruption in issuing licences — and how those risks will be properly addressed.

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- 14 Ibid.
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Criminal plasticity: the growing threat of 3D-printed weapons in South Eastern Europe.

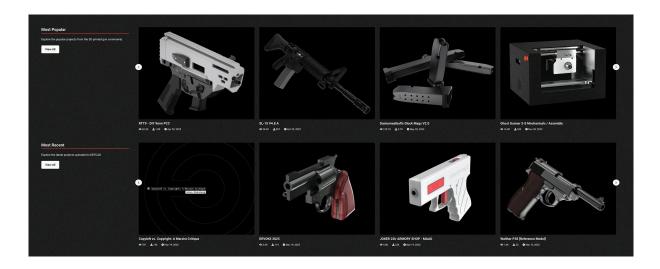
3D printing has revolutionized manufacturing across industries, bringing innovation to medicine, aerospace and consumer products. But there is a darker side to this technological marvel. Criminals and extremists are exploiting 3D printing to create untraceable, fully functional weapons known as 'ghost guns'. As 3D printers become more affordable and sophisticated, the potential for criminal use grows exponentially. Without strict oversight and regulation, anyone with a printer and an internet connection could produce deadly firearms, greatly complicating efforts to prevent violence and crime. The problem is already significant and growing in a number of South Eastern European and neighbouring countries, particularly Greece and Türkiye, with an alarming potential to spread throughout the Balkan peninsula.

The technology behind 3D-printed weapons

3D printing creates objects by layering materials such as plastic, metal or polymers according to precise digital designs. While this method has gained popularity in various industries for its speed and accuracy, it has also opened a Pandora's box of security concerns, particularly regarding the illegal production of weapons and other dangerous items.¹

A pivotal moment came in 2013, when Defense Distributed, a Texas-based manufacturing and design facility, released digital files for the Liberator, the first almost entirely 3D-printed gun. This breakthrough sent shockwaves through security agencies worldwide, demonstrating that a working firearm could be produced by anyone with basic technological access. Unlike conventional weapons, these 3D-printed guns have no serial numbers, making them virtually untraceable and alarmingly easy to distribute. As technology advances and access becomes more universal, the risk of criminals and extremists covertly printing lethal weapons is rapidly escalating, posing a serious threat to public safety.²

The landscape of 3D-printed firearms has developed swiftly since 2013, with multiple models of varying specifications emerging (see Figure 1). More complex designs have followed the Liberator, such as the AR15 lower receiver, a critical component of a semi-automatic rifle, and the FGC-9, a sophisticated 9mm submachine gun developed in 2020. The capabilities of these weapons showcase the terrifying potential of additive manufacturing technology when applied to the production of firearms, particularly as these weapons are able to effectively bypassing traditional gun control measures.³



Defense Distributed's 'wiki weapon' repository, DEFCAD.

Gun model/part	Designer	Туре	No. of 3D- printed parts	Approximate printing time	Material	Year
Liberator	Cody Wilson	Pistol	14	20 hours	ABS	2013
AR15 lower receiver	Cody Wilson	Part of AR-15 semi-automatic rifle	1	9 hours	ABS	2013
1911 DMLS 9mm	Solid Concepts	9mm pistol	33	34 hours	Stainless steel, Inconel 625, PA12	2013
Glock body	Deterrence Dispensed	Glock 9mm pistol body	1	11 hours	ABS	2016
Rapid Additively Manufactured Ballistics Ordnance (RAMBO)	Armament Research, Development and Engineering Center (ARDEC)	40mm grenade launcher pistol	30-40	48 hours	4340 steel, aluminium, ABS, PL12	2016
FGC-9	Jacob D/Deterrence Dispensed	9mm submachine gun	17	90 hours (for all parts)	PLA+	2020

FIGURE 1 Types of 3D-printed guns and parts available worldwide.

Source: Samu Rautio and Mika Broms, Security scenarios: 3D printed firearms, Security and Defence Quarterly, 48, 4 (2024).

Law enforcement agencies worldwide are increasingly confronted with this escalating threat, as criminal actors are now able to manufacture fully functional firearms in their own homes, circumventing background checks and avoiding serial number registration. Europol has issued stark warnings, with police forces across Europe reporting increasing seizures of 3D-printed firearms and their use in crimes.⁴ In 2019, a deadly attack in Halle, Germany, was carried out with a firearm made using 3D-printed components, claiming two lives. In 2021, Spanish police shut down an illegal workshop in the Canary Islands where criminals were making 3D-printed weapons.⁵ In October 2022, British police raided a suspected gun factory in north-west London and uncovered a large cache of 3D-printed firearms and ammunition in one of the most significant seizures of these weapons in the United Kingdom to date.⁶ Around the same time, Icelandic authorities arrested four people for plotting to use 3D-printed firearms in attacks on politicians.⁷

The Balkan powder keg

The Western Balkans are particularly vulnerable to this emerging threat. The legacy of past conflicts has already resulted in the widespread circulation of illegal firearms,⁸ providing fertile ground for the proliferation of these new untraceable weapons. Although evidence of significant production of 3D-printed weapons in the Western Balkans remains limited, countries in and adjacent to South Eastern Europe, such as Greece and Türkiye, are increasingly confronting the issue.

In Greece, authorities dismantled an illegal operation on the island of Samos in February 2024.⁹ A group of four young men had established a clandestine manufacturing network, producing and selling 3D-printed semiautomatic weapons to local buyers. When police raided their operation, they discovered a 3D printer actively generating firearm parts, detailed weapon blueprints and a stockpile of components ready for assembly. The group were not only selling guns, but were part of a growing underground network using encrypted online platforms to connect with others looking to make their own weapons. This case revealed a disturbing new reality: with minimal equipment and internet access, even small, isolated groups can turn ordinary spaces into illegal weapons factories.¹⁰

Neighbouring Türkiye represents another critical point of vulnerability. A key transit point between the Balkans and the Middle East, Türkiye is already a hotspot for arms trafficking, with an extensive black market supplying both organized crime networks and paramilitary groups. The country has already seen models such as the FGC-9 appear on its black market.¹¹

Since mid-2022, these semi-automatic firearms, which can largely be produced with a 3D printer, have been listed for sale in Istanbul for between 18 000 and 20 000 Turkish liras (\notin 470– \notin 530).¹² Some sellers even claim to have modified these weapons for fully automatic fire, although these assertions remain unverified.¹³ While no major incidents involving 3Dprinted firearms have been publicly reported in Türkiye, the growing risk raises concerns about potential spillover into adjacent regions.¹⁴

Bulgaria presents another avenue for this looming threat. Although there is no public evidence that these weapons are being produced or widely used in Bulgaria, journalist briefings indicate that some are being manufactured and sold on black markets across the Balkans.¹⁵ Despite being subject to the European Union's Firearms Directive, which regulates all firearms, including those manufactured using 3D-printing technology, the lack of significant police operations specifically targeting 3D-printed weapons raises concerns about potential gaps in monitoring and enforcement.¹⁶

Regional and global implications

The ongoing conflict in Ukraine has further complicated the region's security landscape, fuelling instability and accelerating weapon proliferation. A recent study by the South Eastern and Eastern Europe Clearinghouse for the Control of Small Arms and Light Weapons (SEESAC) warned of an increasing security risk across the region and the European Union, linking these weapons to expanding criminal activity.¹⁷ With recent indications that the war may be nearing a resolution, there remains uncertainty about how unresolved issues will affect organized crime, particularly the influx of new types of weapons into Europe.¹⁸

a conference in Brussels in January 2025, specifically designed to examine the potential trajectories of the Ukraine conflict and their impact on arms trafficking.¹⁹ Experts used scenario modelling to assess how changes in the conflict could shape smuggling patterns and what measures could help mitigate emerging risks. Echoing the recommendations of the SEESAC report, the conference discussion emphasized the need for strengthened regional cooperation and intelligencesharing, improved monitoring and data collection, and proactive engagement.

Recognizing these complex challenges, the Global

Initiative Against Transnational Organized Crime hosted

The proliferation of 3D-printed weapons is a dynamic and evolving security challenge for South Eastern Europe, with clear warning signs already visible in Greece, Bulgaria and Türkiye. As 3D-printing technology becomes more accessible and refined, the Western Balkans, with its history of conflict and with established illicit arms networks, risks becoming the next frontier for these untraceable weapons.²⁰

While there have not yet been any significant incidents involving 3D-printed weapons in the Western Balkans, the increasing availability of digital blueprints and 3D-printing technology makes it is only a matter of time before the region faces similar challenges to its neighbours. Preventative action now could help prevent a wave of untraceable firearms from entering the black market,²¹ and contain a threat that has the potential to reshape the security landscape of an already fragile region.

Notes

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Acknowledgements

This Risk Bulletin is an output of the Global Initiative Against Transnational Organized Crime's Observatory of Illicit Economies in South Eastern Europe. We would like to thank Safet Mušić for his valuable contribution to this issue. Risk Bulletins are regular outputs of our regional observatories, which draw on civil society networks to provide new data and contextualize trends related to organized-crime networks, illicit trade and state responses to them. If you would like to subscribe to future editions of the Risk Bulletin, please sign up here or email Vanja.Petrovic@globalinitiative.net.

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This publication was produced with the financial support of the United Kingdom's Conflict, Stability and Security Fund. Its contents are the sole responsibility of the GI-TOC and do not necessarily reflect the views of the United Kingdom.

