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Cannabis cultivation and trafficking in the Western Balkans

Background paper commissioned by the EMCDDA

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This report is based on research conducted by an external expert within activities initiated by the IPA7 project. Since 2008 the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) has cooperated with EU candidate and potential candidate countries to develop and implement technical cooperation projects financed by the Instrument for Pre-accession Assistance (IPA) of the European Commission. The ultimate goals of these projects are to familiarise the beneficiaries with EU policies and working methods and to prepare them for participation in the work of the EMCDDA. The EMCDDA launched the IPA7 technical cooperation project in July 2019.

IPA7 — Stepwise integration of the IPA beneficiaries in the activities of the EMCDDA and the Reitox network — comprises six beneficiaries: Albania, Bosnia and Herzegovina, Kosovo*, Montenegro, North Macedonia and Serbia.

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Executive summary

Cannabis production

- Cannabis production in Albania has decreased since 2016, mainly due to an effective policy and to law enforcement efforts. Nevertheless, Albania remains a major producer of herbal cannabis, supplying the EU Member States as well as countries in the region and Turkey.
- The data on quantities of cannabis seized suggests that Albania is the largest producer of cannabis in the Western Balkans. Monitoring the terrain from the air appears to be an important and efficient way to identify areas of cannabis grown outdoors in Albania.
- Industrial-scale indoor cannabis cultivation facilities have recently been identified in several countries in the region. Facilities with over 10 000 plants were reported to have been dismantled recently in Kosovo, North Macedonia and Serbia.
- Some criminals appear to have made use of cannabis seeds imported from the Netherlands due to their shorter growing cycles, which allow for two harvests per year, in April-June and July-September.
- A new development was noted, whereby Western Balkan criminal groups are growing cannabis outdoors and indoors in the EU, close to destination markets. Given the possibility of high earnings, criminal networks from the Western Balkans whose primary activity is cocaine trafficking appear to be involved in setting up cannabis cultivation sites and orchestrating trafficking.
- The highest average potency (D9-tetrahydrocannabinol (THC) of herbal cannabis at retail level in the region was reported by Montenegro and the lowest by Kosovo.
- North Macedonia is the only country in the region where the cultivation of cannabis for medical purposes is allowed. There are recent indications that some of this legally produced cannabis may have been diverted to the illicit drug market.

Cannabis trafficking

- The Balkan route is a 'crossroads' where criminal networks operate using all the opportunities to supply a large EU market. Trafficking routes can switch rapidly depending on the demand, risks and operational capabilities of criminal networks.
- Organised criminal groups from the Western Balkans, in cooperation with criminal networks from the EU Member States, smuggle acetic anhydride (precursor for heroin) to Turkey and return with heroin and cannabis products.
- The smuggling of herbal cannabis originating in Albania on the central Balkan route from the Western Balkans to central and western Europe remains a major route, and large quantities of cannabis transported by truck have been seized. The central Balkan cannabis route has been exploited in both directions, with cannabis products (herbal cannabis, seedlings) also smuggled from western Europe to the Western Balkans, although the quantities are less significant.
- Available data suggests a reduction in smuggling by sea from Albania to Italy. Italy recorded an increase in the production of cannabis and increased seizures at land borders, as well as strong cooperation between Albanian-speaking and Italian criminal networks.
- Herbal cannabis is smuggled into Turkey by sea (via Greece or directly) and by road, although this reduced in 2020 due to COVID-19-related measures. Significant amounts of cannabis are smuggled in trucks carrying legal goods, but also, more recently, in private vehicles.
- In future, air or water drones could emerge as methods for moving cannabis or other types of drugs between the Western Balkan region and the EU. Until then, particular attention should be given to air routes, waterways such as the Danube, and rail networks. Maritime container traffic in Mediterranean ports connected by rail to central and western Europe could be exploited by criminal networks.

Introduction

The study aimed to collect the latest information on cannabis production and trafficking routes in the Western Balkan region by developing an analysis that encompasses both a national and a regional perspective on the following aspects: (i) the role of each of the beneficiary countries and the region in terms of production, transit and destination of herbal cannabis, and how this has changed in recent years; (ii) smuggling routes within the Western Balkans and outside (to EU and non-EU countries), and recent developments; and (iii) production features.

Organised crime has become a central issue in international relations and a threat to safety and development that requires a coordinated response from the EU Member States and international partners. Organised crime is linked to money laundering, tax evasion and corruption, and often operates with impunity. Criminal networks from the Western Balkan region largely cooperate effectively together, despite borders and ethnic divisions.

As strengthening the rule of law and the fight against corruption and organised crime are at the heart of the EU's Western Balkans strategy, the Western Balkans must implement comprehensive judicial reforms, which are crucial to fighting corruption and organised crime.

One of the problems associated with prosecution is the long duration of proceedings. Prosecutions and convictions in the Western Balkans are aimed mainly at the lower levels of criminal organisations, while criminal network leaders tend to go unpunished (UNODC, 2020).

Organised crime and corruption not only harm the citizens of the Western Balkans by threatening their right to security and social cohesion, but also have both potential and real negative effects on the security and stability of EU Member States.

The EU strategy for combating organised crime (2021-2025) urges the EU to step up international cooperation in the fight against organised crime in order to effectively address this transnational threat.

Methodology

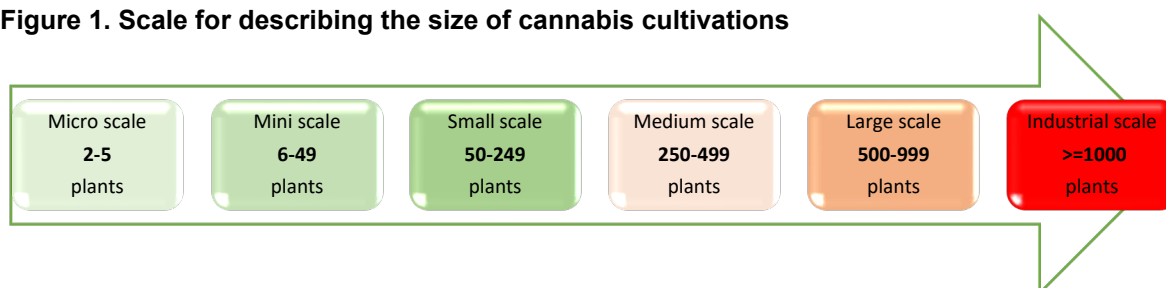
This report has been drafted to provide an overview of cannabis cultivation and trafficking in the Western Balkans in order to increase our understanding of the situation in the region. It is the result of a research activity conducted with the support of experts from the Western Balkans and the EU. The report is based on both quantitative data and qualitative information collected by the expert drafting the report and also by the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) through the IPA7 project.

The findings in this report are based on: (i) information collected during the online facilitated focus groups comprising seven experts from all IPA7 countries and conducted from September to November 2021; (ii) a targeted online questionnaire disseminated to IPA7 partners and filled in by five experts; (iii) a review of the available scientific literature and other data and reports published by governmental and non-governmental entities; (iv) routine data collected by the EMCDDA, including standard tables (forms to routinely collect quantitative data on drug seizures, drug prices, drug purity/potency, drug law offences) and drug market and crime workbooks (templates to routinely collect qualitative and quantitative data on the drug situation at national level); and (v) additional information from individual interviews with more than 10 experts from the region and the EU conducted between September 2021 and February 2022. In general, there is a lack of detailed and sometimes of reliable information on the drug situation in the region. This highlights the importance of strengthening routine drug monitoring data systems in the region for collecting and reporting reliable and comparable information.

In this report, citations are provided only for results based on literature and online sources and not for findings based on the online questionnaire responses, facilitated group discussions and other information provided to the EMCDDA.

In the countries of the Western Balkans there is no clear definition of a small, medium, large or industrial-scale cannabis cultivation. Methods for determining the size of a cultivation vary from country to country, which presents a problem in collecting and analysing data. Several EU countries have categorised cultivations based on the number of plants, so a small cultivation may have 1-10 plants in Hungary, 1-50 in Poland, 20-99 in Germany or 50-249 in Belgium. It is a similar story with larger cultivations: in Germany and Hungary a cultivation with over 100 plants is classified as large, and in Germany and Belgium a cultivation with over 1 000 plants is classified as an industrial or professional cultivation (EMCDDA, 2012). To better understand the size of cannabis cultivation sites, the categorisation of the European Reporting on Illicit Cannabis Production Sites tool (ERICP) — developed by the EMCDDA and Europol, in consultation with a number of EU Member States — is used in this report (see Figure 1).

Figure 1. Scale for describing the size of cannabis cultivations



Challenges and information gaps

In the Western Balkans, data on indoor and outdoor cultivation sites is not routinely collected, and such data cannot be found in annual reports. Seizures of plants are not always shown by the number of plants but by weight added to the total amount of seized herbal cannabis. Analysing this to determine the amount seized from trafficking activities and the amount coming from domestic cultivation can be problematic.

Differences were noted between the data collected during the study and the data that is publicly available. For instance, in 2020 Serbia reported to the EMCDDA a total quantity of approximately 3.2 tonnes of herbal cannabis and over 200 kg of cannabis plants, while in its national report, the quantity is reported as 6.7 tonnes. In Bosnia and Herzegovina, data is structured in such a way that it is difficult to assess the accuracy of the data collected annually from different sources (the Federal Ministry of Internal Affairs, the Police of Brčko District, the State Investigation and Protection Agency, the Border Police of Bosnia and Herzegovina and the Ministry of Internal Affairs of the Republic of Srpska).

There is no clearly disaggregated data on herbal cannabis and high-potency herbal cannabis. Public information often states that high-potency herbal cannabis (sometimes called 'skunk') has been seized, so it is sometimes questionable whether there has been an increase in prices due to market disruptions or to the type of cannabis. It is not possible to estimate the cultivation of cannabis nor the amount of herbal cannabis intended for sale on the basis of data on the number of seized cannabis plants. Key parameters and a different way of collecting data are needed for such an assessment. According to experts, cannabis plants seized in outdoor cultivations often vary in the amount of usable material (leaves and flowers): the quantity can range from 100 to 1 500 grams/plant. To estimate the yield of a cultivation, it would be more accurate to calculate the average height and width of the plants seized at the cultivation, determine the amount of usable material on one average plant and then multiply it by the number of plants.

National perspectives

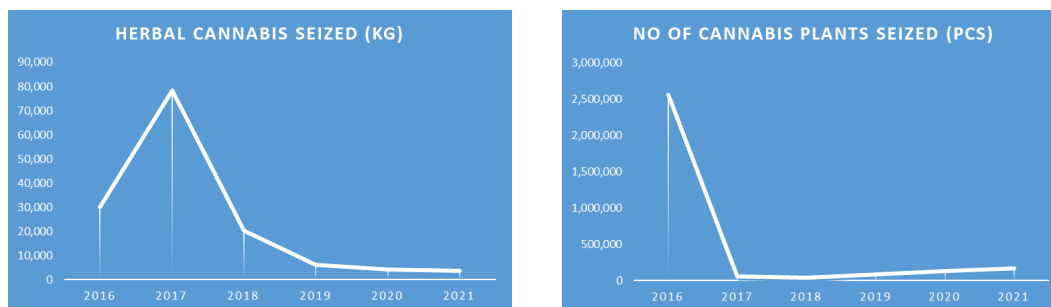
Albania

Albania remains an important producer of herbal cannabis, supplying EU Member States, countries in the region and Turkey. Albania still appears to be the largest outdoor producer of cannabis in the region and there has recently been an increase in indoor cannabis cultivation. For outdoor-grown cannabis, it seems that some criminal networks have introduced plants with shorter growing cycles so that two crops can be harvested each year. In addition to herbal cannabis, the production of cannabis resin and cannabis oil has also been reported. However, Albania does not seem to be a significant producer of other drugs.

Following successful police operations in the village of Lazarat and the Dukagjin mountain area in 2014, cannabis production dispersed to other areas of the country, where cannabis cultivations are hidden in mountainous areas and out of reach of police forces (Mejdini and Amerhauser, 2019). The Albanian Police have implemented strong measures aimed at reducing production, such as the cooperation with the Italian Guardia di Finanza (GDF) that involves aerial surveillance over suspicious areas to identify cannabis cultivations at an early stage. However, despite the efforts to implement measures to detect and destroy outdoor cultivations, organised criminal networks still manage to maintain a certain level of production.

In Albania, following a peak in 2017 when over 78 tonnes of herbal cannabis were seized, a steep downward trend was noted, with only 4.3 tonnes seized in 2020 and, according to preliminary data, approximately 3.6 tonnes in 2021. However, between 2017 and 2021 there was a small increase in the number of cannabis plants seized, albeit that the numbers were much smaller than those reported in 2016 (see Figure 2). This could suggest that law enforcement authorities in Albania are more effective and are dismantling the cultivation sites before cannabis is prepared for smuggling; certainly, this is also an effect of the aerial crop-monitoring project. This technique requires sustained investment.

Figure 2. Herbal cannabis (kg) and cannabis plants (pcs) seized in Albania, 2016-2021



Source: EMCDDA; questionnaire; standard tables; experts (data for 2021 is preliminary)

Indoor cultivation seems to have become more common in Albania (Ora News, 2021), and authorities have reported that the number of sites dismantled increased from three in 2021 to 18 in January-May 2022 (Sinoruka, 2022).

Some organised criminal networks appear to have relocated their operations to countries in the EU, such as Spain. Albanian-speaking criminal networks are involved in both cocaine smuggling and heroin smuggling, so their use of existing smuggling routes is not without precedent. The heroin route from Turkey, for example, is the same one used to smuggle herbal cannabis in the opposite direction.

Albania has made good progress in strengthening the fight against organised crime through cooperation with EU Member States and neighbouring countries, Europol and Eurojust. Police operations to crack down on criminal organisations have intensified, further demonstrating a

commitment to curbing cannabis production and trafficking. As part of the continued implementation of comprehensive judicial reform, the Special Anti-Corruption and Organised Crime Structure has been established, consisting of the Special Prosecutor's Office and the National Investigation Office.

In 2020 the police referred 2 086 drug-related cases to prosecutors (86 % of which were registered by prosecutors), involving 3 205 alleged offenders (a 5 % increase in the number of referrals and an 18.5 % increase in the number of alleged offenders compared with the previous year). However, as in previous years, no cases relating to drug production were referred to prosecutors (European Commission, 2021e).

An issue of concern in Albania is that under the current law, it is not possible to keep only a small sample of the seized drugs as evidence for court proceedings; instead, the entire quantity seized must be stored. The lack of secure storage for drugs and drug precursors prior to destruction is a vulnerability.

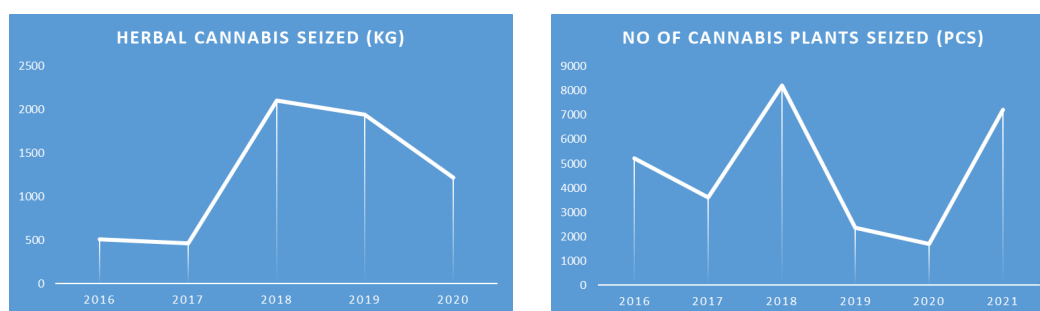
The Albanian State Police plan to focus on individuals or criminal networks that import cannabis seeds in order to initiate proactive investigations (sot.com.al, 2021).

Bosnia and Herzegovina

Bosnia and Herzegovina is an important transit point for herbal cannabis transported from Albania to western Europe, and more recently for the transit of cocaine, as demonstrated by a seizure in the port of Ploce in Croatia (radiosarajevo.ba, 2021). In addition, it appears that some of the smuggled herbal cannabis remains in the country for local supply. Cannabis is also grown in Bosnia and Herzegovina in indoor and outdoor sites to supply the local market. Base on the data collected and the size of cultivations found in recent years, some might also be smuggled outside Bosnia and Herzegovina, although there is little evidence to support this. According to experts, there has been an increase in indoor cannabis cultivation and growing production in the southern and western parts of the country.

The law enforcement authorities seized more herbal cannabis between 2018 and 2020 than in the 2016-2017 period. The number of cannabis plants seized varied from year to year, reaching a peak in 2018, followed by sharp decreases in 2019 and 2020. Preliminary data provided by experts suggests that the number of cannabis plants seized will rise again in 2021 to the same level as 2018 (see Figure 3).

Figure 3. Herbal cannabis (kg) and cannabis plants (pcs) seized in Bosnia and Herzegovina, 2016-2021



Source: EMCDDA; questionnaire; standard tables; experts (data for 2021 is preliminary)

Drug trafficking remains the most common form of illegal activity among criminal networks in Bosnia and Herzegovina, and groups originating in Croatia, Serbia and Montenegro are reported to be operating in the country (Council of Ministers, Bosnia and Herzegovina, 2016).

Corruption, weak cooperation between the numerous law enforcement agencies, and the lack of harmonised legislation (European Commission, 2021a) create a favourable environment for organised crime. The complex structure of crime-fighting bodies and the unclear division of competencies are

weaknesses that make it difficult to take effective and proactive action against organised crime. According to assessments by the European Commission in 2020 and 2021, Bosnia and Herzegovina has a certain level of preparedness in the prevention and fight against corruption and organised crime; however, poor institutional coordination leads to a systematic lack of operational cooperation and very limited intelligence sharing. Proactive intelligence-led police investigations are rare. Exchange of information with Europol still takes place through a unit within the Police Cooperation Directorate, the mandate of which has expired, and with which the Republic of Srpska entity has suspended operational cooperation (European Commission, 2021a).

The law stipulates that all the drugs seized, and not just a sample, are kept as evidence for court proceedings. The lack of secure storage before destruction may be problematic.

According to the available data on drug-related offences, the number of registered offences increased from 1 487 in 2016 to 2 613 in 2020. As in most places, the largest proportion of offences related to drug possession and enabling the use of drugs, while the number of criminal offences for production and supply was lower.

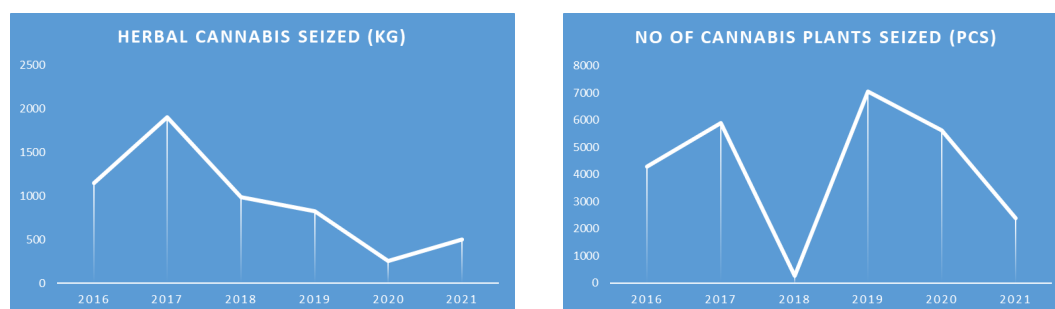
Kosovo

Kosovo continues to be both a transit and a storage country for drugs, particularly herbal cannabis and heroin. Kosovo is located on the route for smuggling heroin from east to west, and for smuggling herbal cannabis from Albania to North Macedonia, Greece and Turkey, as well as towards Serbia. In addition to herbal cannabis from Albania, some of which remains in Kosovo, organised criminal groups and individuals grow cannabis indoors and outdoors. An industrial-scale indoor cultivation site near the border with Serbia was dismantled in May 2022 and over 10 000 plants were seized (RTK live, 2022). Considering the scale of the site, it is possible that some of the drugs produced there would have been exported. Cannabis resin production has not been reported in Kosovo, and nor has equipment for cannabis oil extraction.

According to the first national Serious and Organised Crime Threat Assessment (SOCTA), criminal networks operating in Kosovo are well organised and operate mostly in small groups (Kosovo Police, 2016).

The largest amount of herbal cannabis was seized in 2017, followed by a downward trend; 2020 saw the seizure of the smallest amount of herbal cannabis in five years. Seizures of cannabis plants plummeted in 2018, but rose sharply to their highest level in 2019 before declining in subsequent years (see Figure 4).

Figure 4. Herbal cannabis (kg) and cannabis plants (pcs) seized in Kosovo, 2016-2021



Source: EMCDDA; questionnaire; standard tables; experts (data for 2021 is preliminary)

According to the 2021 European Commission report, the situation in Kosovo remains challenging, in particular in terms of corruption and organised crime. Organised crime groups continue to play a dominant role in large-scale drug trafficking and subsequent distribution in the EU, but Kosovo is at an early stage in the fight against organised crime. The introduction of laws that are important for the fight against organised crime are still not yielding significant results. Weaknesses are present in both

the judiciary and the police, where there is insufficient application of a proactive, intelligence-led policing approach and inter-agency cooperation. It is crucial to increase the exchange of information with the countries in the Western Balkan region. However, the Kosovo Police are assessed to have adequate capacity and capability to combat organised crime in Kosovo (European Commission, 2021b).

The number of drug-related offences registered by the Kosovo Police reached its peak in 2018, with a total of 1 866 cases. The largest proportion of these offences related to drug possession.

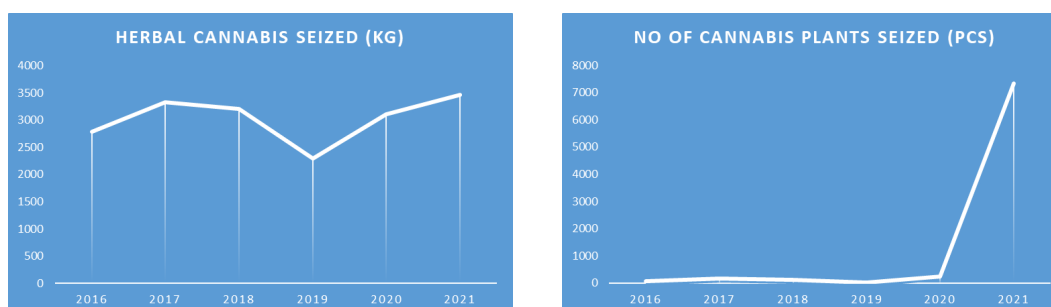
Regarding the improvement of practices relating to drug-related crime, there are provisions for the safe storage of seized drugs until their destruction. However, a protocol for the handling, storage and destruction of drug precursors has not yet been established. In the case of cultivation sites, samples are taken at the production site before the rest is destroyed.

Montenegro

Montenegro is an important country for the transit and storage of herbal cannabis coming from Albania. Some of this remains in Montenegro for the local market and is supplemented with domestically produced cannabis. Herbal cannabis from Albania is smuggled through Montenegro by organised crime networks for further trafficking to western Europe via the Balkan route. Quantities between 10 kg and 200 kg are typically transported by land, but also by boat over Skadar Lake, which forms a natural border between Albania and Montenegro (Government of Montenegro, 2021e), or by sea. Larger quantities may also be shipped; for example, in July 2018 the Montenegrin police found 1 332 kg of cannabis in the sea at the mouth of the Bojana River, on the border between Albania and Montenegro (balkans.aljazeera.net, 2018).

Herbal cannabis seizures remained relatively stable over the period 2016-2021, while cannabis plant seizures increased sharply in 2021, according to preliminary data for 2021 (see Figure 5).

Figure 5. Herbal cannabis (kg) and cannabis plants (pcs) seized in Montenegro, 2016-2021



Source: EMCDDA; questionnaire; standard tables; experts (data for 2021 is preliminary)

The available data suggests that outdoor cultivation has emerged in different parts of Montenegro (Government of Montenegro, 2021b, 2021c, 2021d), while it appears that indoor cultivation remains low (Government of Montenegro, 2021a). In 2021, 10 cultivation sites and about 8 000 plants were seized in the central part of the country (Government of Montenegro, 2021e). In 2021 the first sophisticated indoor cultivation site was dismantled, and while this case may signal a new direction in Montenegro, it is too early to describe it as a trend.

Criminals from Montenegro are active in cocaine trafficking in the EU and Latin America, and more recently in cannabis cultivation in the EU. Some networks engaged in cocaine smuggling appear to have expanded their drug portfolio by getting involved in cannabis cultivation in Spain and Germany (Government of Montenegro, 2021e).

North Macedonia

North Macedonia borders Albania and is on the central branch of the Balkan route in the direction of Serbia, but is also connected to the southern branch. This location makes it a key point in the fight against drug-related criminality, since it is an important route for heroin coming in from Turkey towards western Europe.

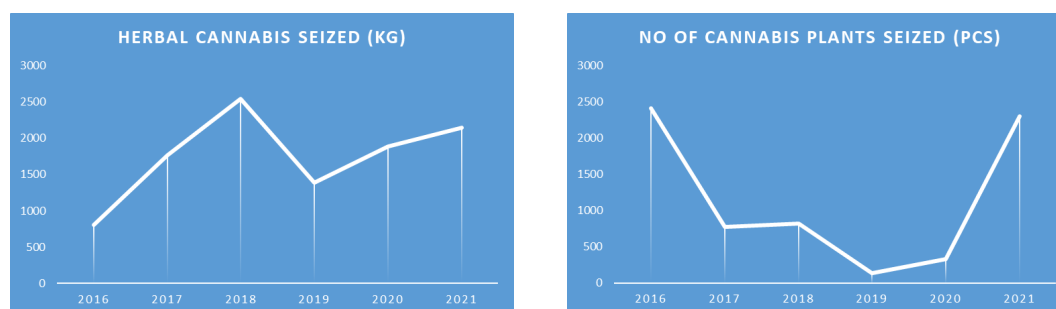
North Macedonia is also an important country for the transit and storage of herbal cannabis originating in Albania on its way to consumer markets further west. Some of the herbal cannabis smuggled from Albania remains in North Macedonia for the local market, which is also supplied with domestically produced cannabis.

Criminal networks have increased the smuggling of herbal cannabis into Turkey in response to increased demand due to a decline in domestic production (Testorides, 2021). According to experts and various other sources, a new trend is for criminal networks from North Macedonia and Turkey to exchange herbal cannabis for heroin (US Department of State, 2022; Sinoruka, 2022). Criminal networks from North Macedonia seem to procure herbal cannabis from Albania and transport it to Turkey, where it is exchanged for heroin, which is then transported back to North Macedonia, en route to Albania.

In relation to cannabis production and trafficking, there is cooperation between criminal networks from North Macedonia and Albanian-speaking criminal networks. Organised crime groups are hierarchically organised, linked on the basis of family, friendship or shared criminal past, and are often ethnically heterogeneous. According to experts, criminal networks from North Macedonia operate at international level, cooperating with criminal networks from Serbia and Albania to set up indoor cultivation sites in the EU, primarily in Austria and Germany. In addition, the presence of criminal networks from Albania has also been noted in North Macedonia.

Herbal cannabis seizures peaked in 2018 and have been gradually rising since 2019 (see Figure 6). The number of plants seized declined between 2016 and 2020, but preliminary data for 2021 suggests a significant increase, potentially indicating an increase in cultivation in North Macedonia.

Figure 6. Herbal cannabis (kg) and cannabis plants (pcs) seized in North Macedonia, 2016-2021



Source: EMCDDA; questionnaire; standard tables; experts (data for 2021 is preliminary)

North Macedonia is the only country in the region where cannabis cultivation for medicinal purposes is allowed. This is a cause for concern, as some of the legally produced cannabis may be diverted to the illegal drug market. According to the Law on Narcotic Drugs and Substances, cultivation of cannabis is allowed, as is the production of cannabis seeds and seedlings for medical or scientific purposes.

Two cases of theft of medical cannabis from authorised growers were registered in 2020. In the first case, almost 2 tonnes was stolen from a company that has a cultivation licence (Ministry of Interior of North Macedonia, 2020a) and in the second case, about 60 kg was stolen (Ministry of Interior of North Macedonia, 2020b). Experts stated that in 2021, 18 301 plants and 6 960 ml of preparations of THC were confiscated from legal entities who held a licence for the production of cannabis oil extracts for

medical purposes and whose production premises and equipment were used for the illegal production of drugs.

The number of drug-related offences reached a peak of 896 cases in 2019, followed by a slight decline.

North Macedonia has achieved a certain degree of preparedness in the fight against organised crime and corruption, and its legislative framework is broadly in line with European standards. According to the European Commission, North Macedonia should improve its track record of investigations, prosecutions and convictions for organised crime and money laundering, and should demonstrate its ability to effectively dismantle large criminal networks. In terms of international legal cooperation, North Macedonia participated in 36 cases at Eurojust in 2020 (a 38 % increase compared with 2019), relating to fraud, money laundering and drug trafficking (European Commission, 2021c).

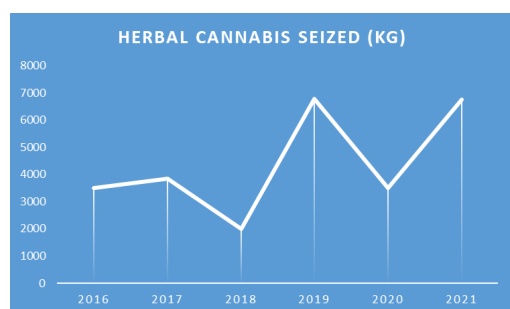
It should be noted that in North Macedonia the laboratories for drug examination, including the Forensic Laboratory of the Ministry of Interior, do not test the purity and potency of drugs.

Serbia

Along with Bosnia and Herzegovina and Montenegro, Serbia is geographically positioned on the EU's external border. Serbia seems to be a transit, storage and destination country for herbal cannabis trafficked from Albania, but there is also evidence to suggest an increase in domestic cultivation. According to the Serbian *Public security strategic assessment* (2017), criminal networks in Serbia invest significant funds in the indoor cultivation of high-potency herbal cannabis, which is mostly intended for the domestic market, but partly for other countries (Ministry of Interior of Serbia, 2017).

Seizures of herbal cannabis peaked in 2019 and preliminary data suggests similar quantities for 2021 (see Figure 7); however, it must be noted that cannabis plants reported in kilograms may also be included. Compiling and analysing data on seizures of herbal cannabis and cannabis plants has proved to be challenging, as data is often mixed and reported together, with cannabis plant quantities being reported in different units, either number of plants or kilograms. Of the total quantities seized, a certain proportion are plants, e.g. 6.6 % in 2018, 7.9 % in 2019 and 6.5 % in 2020.

Figure 7. Herbal cannabis (kg) in Serbia, 2016-2021



Source: EMCDDA; questionnaire; standard tables; experts (data for 2021 is preliminary)

A strategic assessment in 2016 estimated that herbal cannabis produced in Serbia was intended mainly for the domestic market, and to a lesser extent for export (Ministries of Interior of Serbia, Montenegro and North Macedonia, 2016). However, given the increasing number of facilities, amounts of sophisticated equipment and quantities seized, the current situation appears to have evolved.

Criminal networks in Serbia are involved in the trade of all types of illicit drugs. Criminal networks from Serbia cooperate well with networks from neighbouring countries (Montenegro, Croatia, Bosnia and Herzegovina, Slovenia) and are involved in the large-scale smuggling of cocaine from South America to the EU as part of the so-called 'Balkan Cartel', a term frequently used to describe organised crime

networks from the Balkan region (hzjz.hr, 2020; Durmišević, 2020). Although their dominant activity is cocaine trafficking, their involvement in cannabis cultivation in the EU has been noted in numerous operations carried out by law enforcement in the EU Member States (efe.com, 2021).

Strengthening the institutional and legislative framework in Serbia is crucial because of the strong corrosive impact of organised crime on society as a whole. It is especially important to strengthen the judicial system, as well as to strengthen the fight against corruption and organised crime. According to the European Commission, Serbia has made limited progress in this regard in 2020-2021 (European Commission, 2021d).

In the period 2016-2020, the largest number of drug-related offences was recorded in 2019, when 11 134 cases were registered; a slight decrease was noted in 2020.

Regarding participation in international activities in the fight against serious and organised crime, in 2020 Serbia was involved in 16 cases at Eurojust and participated in three joint investigation team set-ups in cases relating to drug trafficking, money laundering and organised crime (European Commission, 2021d).

The current legislation requires that the total amount of seized drugs, rather than just a sample, must be kept as evidence in court proceedings until the end of the trial.

In January 2021 a new software application for keeping records and conducting statistical analyses of seized drugs on a regular basis was implemented. This software allows for daily updates of seized drug quantities, in communication with the National Forensic Centre (European Commission, 2021d).

Cannabis production: changes at all levels

The European perspective

Cannabis production takes place in all EU countries and the cannabis market remains by far the largest drug market in the EU. In 2020 EU Member States reported seizures of 584 tonnes of cannabis resin (464 tonnes in 2019) and 155 tonnes of herbal cannabis (130 tonnes in 2019). Additionally, Turkey seized 37.5 tonnes of cannabis resin and 56.3 tonnes of herbal cannabis in 2020 (EMCDDA, 2022).

In 2020 almost 2.8 million cannabis plants were seized in the EU and over 117 million by the EU, Turkey and Norway combined. Thus, the quantity of plants seized in the Western Balkans seems comparatively small in the European context. In the same year, fewer than 140 000 plants were seized in Albania (the country in the region that reported the highest number of cannabis plants seized), which is low compared with some countries such as Spain (over 1.4 million plants) and the Netherlands (fewer than 0.5 million plants), but similar to Poland (almost 120 000 plants) and France (over 115 000 plants) (EMCDDA, 2022; EMCDDA, Statistical Bulletin).

According to the EU SOCTA, indoor cultivation is still the main source of cannabis available in the EU, and Albania remains an important source of herbal cannabis smuggled into the EU (Europol, 2021a). Morocco remains the main source of cannabis resin while a small share comes from Afghanistan, Lebanon and Syria.

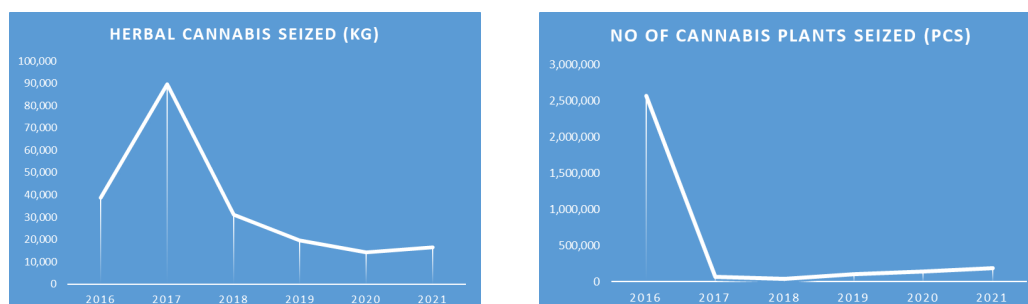
The fact that cannabis is produced in all EU Member States is the reason why the scale of production and its origin are often difficult to assess compared with those for other types of drugs. It is necessary to further analyse the source of cannabis so that superficial estimates do not lead to incorrect conclusions. Very often, the stated origin of the drug is actually the last-known departure point rather than the real source.

Cannabis production in the Western Balkans — recent increase in plant seizures

Looking at the share and role of the Western Balkans in terms of production, trafficking and smuggling into the EU and within the region, available data shows that all Western Balkan countries are important transit areas and final destinations for cannabis, given that the central branch of the Balkan route passes through them. Estimates of annual production depend on a data collection methodology that is interpreted differently in different countries.

Herbal cannabis seizures peaked in 2017, followed by a steady decline, while the number of cannabis plants seized declined abruptly in 2017, but has been slowly increasing since (see Figure 8).

Figure 8. Herbal cannabis (kg) and cannabis plants (pcs) seized in the Western Balkans, 2016-2021



Source: EMCDDA; questionnaire; standard tables; experts (data for 2021 is preliminary)

In addition to total seizures of herbal cannabis in the Western Balkan countries, data on seizures of cannabis plants shows that cannabis production takes place in these countries.

As previously mentioned, cannabis is grown outdoors and indoors in all countries, although there are significant differences between countries in the ratio between outdoor and indoor cultivations as well as their size. It appears that Albania remains the most important producer of outdoor cannabis in the region.

Outdoor cultivation — diminished role

In the early 2000s Albania emerged as an important source of herbal cannabis in Europe. In 2014, in the area of the villages of Lazarat and Dukagjin where cannabis production was concentrated, Albanian authorities seized tens of tonnes of cannabis. These actions by Albanian police saw fierce resistance from the groups involved, resulting in officers being wounded. However, the actions are believed to have led to an increase in the price of herbal cannabis in the EU, indicating the significance of this source of cannabis for the EU (Zhilla and Lamallari, 2015).

In 2014, 101.7 tonnes of cannabis was seized in Albania, much more than in 2013, when 20.7 tonnes was seized, showing a concerted law enforcement response to the high levels of production. In addition to the seizures of herbal cannabis, 2 214 cannabis cultivations were destroyed countrywide in 2014 and over 530 000 cannabis plants destroyed. The total value of the seized cannabis was a staggering EUR 7 billion (Council of the European Union, 2015).

It appears that after the police actions, relocation of production and expansion to the mountainous areas in the whole country took place as criminal networks continued production. Production was estimated to be 900 tonnes in 2015 and 1 300 tonnes in 2016 (Weinberger et al., 2019).

According to data collected through the questionnaire and from annual police reports, an increase in the number of outdoor cultivations has been recorded in many Western Balkan countries. The preliminary data for 2021 shows that 1 119 cultivations (a decrease from 1 964 in 2020) and over 160 000 cannabis plants were seized in Albania (an increase from over 137 000 in 2020) (Halili, 2021b; see Table 1). According to experts, Albania reported an increasing number of cases with a shorter 3-month cannabis outdoor cultivation cycle, allowing two outdoor crops per year, April-June and July-September, using seeds from the Netherlands. According to some sources, cannabis is cultivated mainly in the mountain range of Dukagjin, Kruja and the Vlora region (euronews.al, 2021a).

Monitoring the terrain from the air has remained the most important measure for identifying areas of cannabis cultivation. Flights were conducted by the Italian GDF in the framework of the protocol approved in 2012 by the Italian Ministry of Interior and the Albanian General Directorate of State Police in Support of the Anti-Cannabis Strategy (see Table 1). In addition, the Albanian State Police started monitoring cannabis cultivations using drones (European Commission, 2021e).

Table 1. Aerial monitoring data from the Guardia di Finanza, 2016-2021

Year	2015	2016	2017	2018	2019	2020	2021
Period	Jun-Sep	Jun-Sep	May-Sep	May-Oct	May-Oct	May-Oct	May-Oct
Flight missions	39	42	58	69	82	67	70
Flight hours	89 h 46'	105 h 53'	144 h 16'	187 h 42'	225 h 10'	185 h	182 h 20'
Overflowed and scanned area	454.900 ha	506.628 ha	686.490 ha	733.650 ha	735.013 ha	954.070 ha	650.257 ha
Suspected cannabis cultivations	1 368	2 086	90	27	1 109	1 964	1 119
Area of suspected cannabis cultivations	44.7 ha	213.46 ha	2.16 ha	0.85 ha	3.85 ha	7.27 ha	37.6 ha
Percentage of positive feedback from Albanian State Police on cannabis cultivation	99.60 %	99.80 %	100 %	100 %	100 %	100 %	100 %
Number of plants destroyed	242 945	753 468	5 331	675	58 423	58 423	92 428

Source: EMCDDA; questionnaire

In Bosnia and Herzegovina during 2018-2020, the largest number of cannabis plants seized was 8 215 in 2018, followed by 2 350 in 2019 and 1 710 in 2020. In 2018 two industrial-scale cultivations were found and destroyed, one with 1 083 plants (Gradiška) and the other with 2 246 (Posušje). According to preliminary data, there was a large increase in the number of outdoor-produced plants in 2021 (see Table 2). Note that the data in the table represents case examples, not the country totals.

Table 2. Examples of outdoor cultivations seized June-September 2021 in Bosnia and Herzegovina

Month	Quantity (plants)	Size	Place
June	372	Medium	Čitluk
July	6 000	Industrial	Velika Kladuša
July	30	Mini	Berkovići
August	330	Medium	Grude
August	53	Small	Konjic
August	99	Small	Mirilovići
August	34	Mini	Nevesinje
September	43	Mini	Trebinje
September	21	Mini	Banja Luka
September	84	Small	Čapljina
September	29	Mini	Mostar

SIZE	PLANTS
Industrial	>=1000
Large	500-999
Medium	250-499
Small	50-249
Mini	6-49
Micro	2-5

Source: experts; open sources

In general, most of the cultivations are relatively small, with up to 100 plants, grown by locals. In some cases criminal networks are involved and weapons have been found during house searches.

Of the selected cultivation seizures in 2021, the most significant is the one found in the area of Velika Kladuša, with 6 000 plants. This cultivation was seized after several months of investigation targeting a Montenegrin criminal network known as the Škaljari clan, which is also involved in cocaine trafficking and is connected with other criminal networks from Slovenia, Serbia and Montenegro (Avdić, 2022).

In Kosovo, smaller, less sophisticated cultivations (with, for example, no fertilisation) were those found most often. In the case of outdoor cultivations, destruction of plants has usually been carried out at the scene. The largest number of plants was found in 2019 (6 911 plants), while the largest number of cultivations was found and destroyed in 2020 (32 sites). It is interesting that the involvement of criminal networks from Albania in cultivation has been noted in Kosovo (kosovo-online.com, 2021).

According to the available data, there also seems have been an increase in Montenegro. In 2021 over 7 000 plants were seized in 17 cases, whereas in 2020 fewer than 250 plants were seized. The cultivations seized between June and September 2021 were mostly small, but two were industrial and one was large (see Table 3).

Table 3. Examples of outdoor cultivations seized during June-September 2021 in Montenegro

Month	Quantity (plants)	Size	Place
July	222	Small	Cijevna Zatrijebačka
July	20	Mini	Balabani-Mrka
July	3 700	Industrial	Rvaši
July	120	Small	Popratnica
July	18	Mini	Nikšić
July	30	Mini	Gusinje
August	85	Small	Propratnica
August	860	Large	Podhum
August	180	Small	Rudine
August	1 330	Industrial	Gostiljska Rijeka
August	132	Small	Srijede
August	229	Small	Bratosavina
September	119	Small	Budva-Markovići
September	19	Mini	Nikšić
September	182	Small	Nikšić
September	95	Small	Nikšić
September	9	Mini	Nikšić

SIZE	PLANTS
Industrial	>=1000
Large	500-999
Medium	250-499
Small	50-249
Mini	6-49
Micro	2-5

Source: experts; open sources

In North Macedonia, cannabis cultivation seems to be at a low level. However, in 2021 the number of plants seized (881) increased compared with the previous year (329). At three locations near the border crossing point at Blace, between North Macedonia and Kosovo, cultivations with a total of 545 plants were discovered. According to experts, cannabis cultivations were also noticed around the city of Stip (Golak and Delchevo), in the vicinity of Skopje (Gracani) and in the vicinity of Strumica (Kriva Palanka). In addition, 18 301 plants and 6 960 ml of alcoholic solutions of ethanol with the presence of THC were confiscated from legal entities holding a licence for the production of cannabis oil extracts for medical purposes whose production premises and equipment were used for the illegal cultivation of cannabis and the production of cannabis extracts.

Illicit production does not appear to have been affected by developments in legal production, as indoor and outdoor cannabis facilities continue to be seized. For example, in June 2022 an industrial-scale outdoor cannabis production site of 1 300m² with about 15 500 plants was dismantled (Ministry of Interior of North Macedonia, 2022). At this stage, there is no detailed information available about the cultivation, but given the scale, it is likely that some of it would be exported.

Available data for Serbia shows that the outdoor production of cannabis has increased, especially in areas near rivers. Most often, the perpetrators decide to grow cannabis in gardens and fields, but also on land that has no registered owner or is a public space.

In 2021, according to experts, approximately 113 outdoor cultivations were found and seized by the police.

Table 4. Example of cultivations seized July-December 2021 in Serbia

Month	Quantity (plants)	Size	Quantity (kg)	Place
July	34	Mini		Aleksinac
August	73	Small		Balajnac
August	171	Small		Loznica
August	44	Mini		Paraćin
September			292	Požarevac
September	1 260	Industrial	22	Medvedja
September	510	Large		Arandelovac
September	20	Mini		Kruševac
September	100	Small		Bosilegrad
December			750	Doljevac

SIZE	PLANTS
Industrial	>=1000
Large	500-999
Medium	250-499
Small	50-249
Mini	6-49
Micro	2-5

Source: experts; open sources

Indoor cultivation — a trend that might become a norm

Montenegro and Kosovo are the countries with the smallest number of recorded indoor cultivations. In Montenegro, one indoor cultivation with 15 plants was seized in 2019, and one in 2021. In 2021 the first sophisticated indoor cultivation site was dismantled in Montenegro, and while this may signal a change, at this stage it cannot be said to be a trend.

In Kosovo there were five indoor cannabis cultivations detected in the period 2019-2021, three them in 2021. An industrial-scale indoor cultivation site with over 10 000 plants was seized near the border with Serbia and dismantled in May 2022 (RTK live, 2022). Given the large scale of the site and the location, some of the product may have been for export. In Albania, indoor cultivation seems to be an emerging trend, according to experts and police operations (Ora News, 2021). The number of indoor cultivation sites dismantled by the authorities increased from three in 2021 to 18 in January-May 2022 (Sinoruka, 2022).

In Albania it appears that since around 2017, criminal networks may be focusing their efforts on having many small-to-medium-scale indoor cultivation sites located in different places. In 2017 three sites were discovered: in the Fier area (2 784 cannabis plants, 2 820 seedlings and 167 drying plants); in Skrapar (2 000 plants); and near Tirana, in a former factory tunnel ('a considerable amount' of planted cannabis) (exit.al, 2017).

Indoor cultivation usually takes place in houses or old warehouses. A handful of cases have been exposed in Albania recently. An operation in the city of Laçi revealed that growers were using electric lights to provide the heat for the growth of cannabis planted in large pots (euronews.al, 2021b). During the operation, 205 cannabis plants were seized. An illegal electricity connection was found in the building, which served to power the lights, aspirators, ventilation filters, etc. The methods and techniques are similar to those used in western Europe. These developments in Albania may be linked to knowledge gained by Albanians involved in cannabis cultivation in countries such as the UK, Spain and the Netherlands.

Table 5. Example of indoor cultivations seized 2021-2022 in Albania

Year	Quantity (plants)	Size	Quantity (kg)	Place	Police operations
2022	730 plants, 1 200 seedlings	Industrial		Berdice, Shkoder	
2021	506 plants	Large	56	Kurbin	OP Bushneshi
2021			100 and 0.5 litres cannabis resin oil	Shkoder	OP Bushati
2021	110 pots with seedlings	Small	2	Durres	OP Rent
2021	132 seedlings	Small	139	Shkoder	OP Jeran

SIZE	PLANTS
Industrial	>=1000
Large	500-999
Medium	250-499
Small	50-249
Mini	6-49
Micro	2-5

Source: experts; open sources

According to experts and official sources, cannabis cultivations and indoor sites have been found throughout Bosnia and Herzegovina in recent years (Ministry of Security of Bosnia and Herzegovina, 2020). Indoor cannabis production sites were discovered in Srbac in July 2019 (Jutarnji, 2019), in Banja Luka in June 2020 (Oslobodenje, 2020) and in Sarajevo in 2021 (Klix.ba, 2021).

Table 6. Examples of indoor cultivation sites 2019-2021 in Bosnia and Herzegovina

Year	Quantity (plants)	Size	Quantity (kg)	Place
2022	85	Small		Mostar
2022	20, 62 seeds	Mini	1.7	Prnjavor
2021			1	Zavidovići
2021	15	Mini	1.6	Sarajevo
2021	106	Small	2.7	Sarajevo
2020	44 pots with plant remains	Mini	1.3	Banja Luka
2019	500	Large	hundreds	Srbac
2019	756	Large	1.8	Laktaši
2019	500 pots with plant remains	Large		Gradiška
2019	350	Medium		Sarajevo

SIZE	PLANTS
Industrial	>=1000
Large	500-999
Medium	250-499
Small	50-249
Mini	6-49
Micro	2-5

Source: experts; open sources

According to the data collected, indoor cultivation in North Macedonia is at a low level, with four sites dismantled between 2018 and 2020. Two cultivations were discovered in the area of Skopje, one in Stip and one in Probistip; 3.5 kg of herbal cannabis, 28 plants, 52 grams of cannabis seeds and a small amount of cannabis resin oil were seized in these cases. However, experts say that criminal networks appear to be becoming more interested in indoor cultivation. In 2021, according to preliminary data, three cannabis cultivation sites were dismantled, with 421 cannabis plants, 1 074 grams of herbal cannabis and production equipment seized.

This phenomenon should be monitored closely, given that the Law on Narcotic Drugs and Substances in North Macedonia allows the cultivation of medical cannabis and the production of cannabis seeds and seedlings for medical and scientific purposes. This situation has already been abused several times by licensed companies. Also, given that companies licensed to produce cannabis for medical purposes employ a large number of people, the knowledge gained could be exploited by criminal networks.

The indoor cultivation trend is more visible in Serbia, where criminals appear to invest more in equipment (Telegraf.rs, 2021), including surveillance systems and high-quality items that are also used in legal agricultural production. In November 2019 a sophisticated industrial-scale facility (probably the biggest indoor cultivation site in the region) was dismantled in Serbia (see also Case study: Serbia, almost 4 tonnes of indoor cannabis).

Case study: Serbia, almost 4 tonnes of indoor cannabis

In November 2019 almost 4 tonnes of cannabis (649.4 kg of herbal cannabis and 65 581 cannabis plants weighing 3 954 kg) was seized in the municipality of Stara Pazova. Nine members of the criminal network, including officials, were arrested. In addition, the owner of the company was also charged with forging documents. It was determined that in the administrative building of the company concerned, there was a server that supported the 'Razgovor' application, through which the members of criminal network communicated.

Source: Reuters (2019); Zorić (2020)

It appears that some perpetrators rent houses, apartments, etc., for use as indoor cultivation sites. Sophisticated equipment (lights, watering system, ventilation system, etc.) purchased through online shops abroad, but also from legal agricultural stores in the country, has been seen in some sites and it is usually the case that the electricity used for these facilities is stolen.

According to the available data, including annual reports of the Ministry of the Interior of Serbia, the police dismantled a significant number of indoor facilities between 2018 and 2021, with some examples provided in Table 7.

Table 7. Examples of indoor cultivation sites seized 2018-2022 in Serbia

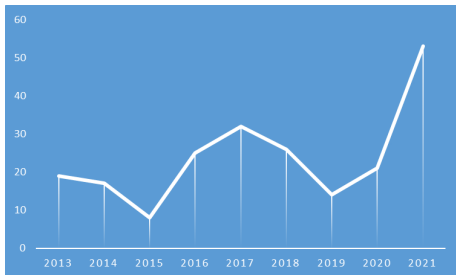
Year	Quantity (plants)	Size	Quantity (kg)	Place
2022	1 220	Industrial	10.5	Mramor
2021	1 170	Industrial		Ub
2021	2 176	Industrial		Gakovo
2021	1 500	Industrial		Mirosaljci
2021			110	Jagodina
2021	90 plants, 343 pots	Small		Zemun
2021	63	Small		Merošina
2020	1 220	Industrial		Kikinda
2020	367	Medium	8	Zemun
2019	1 268	Industrial	158.7	Grocka
2019	855	Large	36.4	Strmovo
2019			110.2	Šantarovac
2019	300	Medium		Novi Sad
2018	966	Large	150.3	Gakovo
2018	277	Medium		Draževac
2018	640	Large		Lisovići
2018	384	Medium		Krušedol
2018	217	Small		Mali Idoš

SIZE	PLANTS
Industrial	>=1000
Large	500-999
Medium	250-499
Small	50-249
Mini	6-49
Micro	2-5

Source: experts; open sources

The highest number of indoor cultivation sites dismantled during 2013-2021 was recorded in 2021, which had more than double the number dismantled in 2020 (see also Figure 9). Of these indoor sites, two of the smaller facilities, one in 2018 and one in 2020, were intended for the production of cannabis oil.

Figure 9. Indoor cannabis cultivations dismantled by Serbian authorities



Source: scindeks-clanci.ceon.rs (2020); experts

With regard to the impact of COVID-19 on cannabis production, based on a rapid assessment conducted by the EMCDDA, no significant disruption was observed in the region due to restrictions, while some criminal networks appeared to have seen the COVID-19 pandemic as an opportunity to increase cannabis production, as law enforcement efforts were redirected to COVID-19-related duties (EMCDDA, 2021).

Law enforcement authorities use technology to identify outdoor cultivation sites (e.g. aerial monitoring in Albania). Similarly, technology can also be used to identify indoor cannabis cultivation (see Case study: Technology to identify indoor cultivation sites).

Case study: Technology to identify indoor cultivation sites

In this example, a thermal imaging camera was used to detect indoor cultivation in Croatia. A police helicopter identified a suspicious location where an indoor cannabis site was subsequently found. Handheld thermal imaging cameras are also used for this purpose.

Source: Ministry of Interior of Croatia

Figure 17. Picture with indoor cultivation facilities indoor



Relocation of cannabis production to the EU

The overall decline in cannabis production and trafficking in the region also appears to be related to a change in perspective of some criminal groups. More and more criminal networks from the Western Balkans (mainly Albanian-speaking and Serbian) are growing cannabis in the EU, closer to the destination markets, which makes sense considering the difficulties, risks and costs of transport.

Several factors are likely to have prompted this: (i) intensified police actions, such as aerial monitoring; (ii) lower risk and cost associated with transport; (iii) proximity to the lucrative market; (iv) lower penalties compared with those for other drugs; (v) free movement within the Schengen area (apart from temporary closures during the COVID-19 pandemic); and (vi) operating in an area where the criminals and their criminal backgrounds are not known. This new trend has been particularly noticeable in recent years — approximately 6 years — in many EU countries, mainly Spain, but also

Belgium, France, Germany and Italy, where a number of successful police operations have been conducted (Europol, 2019, 2021b, 2021d; Newsit, 2020).

The profitability of cannabis cultivation is also reflected in the involvement of criminal networks from the Western Balkans, whose predominant criminal activity is cocaine trafficking (Europol, 2021c). Clearly, minimal investments and high earnings are the reasons that criminal networks are increasingly oriented towards cannabis cultivation. For example, in Spain 1 kg of herbal cannabis in Andalusia costs about EUR 1 700 compared with EUR 6 500 in Germany and more than EUR 9 000 in Sweden (*El Pais*, 2021).

It seems that Spain has faced a significant increase in cannabis cultivation, with a predominance of indoor over outdoor cultivation. According to open sources (*El Pais*, 2021), citing official Spanish law enforcement reports (Centro de Inteligencia contra el Terrorismo y el Crimen Organizado - CITCO), there has been a growth trend in cannabis cultivation since 2015. In 2020 more than 3 800 arrests for trafficking in cannabis were recorded, with most of the perpetrators being Spanish, followed by Albanians and Moroccans. More than 100 criminal networks from the Western Balkans were reported to be active in Spain (Urošević, 2021). News reports also allude to this: for example, it was stated in *El Pais* that 'Members of the Eastern European gangs — mostly Albanians and Kosovars — settling in the Marina Alta area of Alicante province are dedicated predominantly to cocaine and herbal cannabis trafficking as well as arms, the volume of which, according to one National Police investigator, has tripled in recent years' (*El Pais*, 2021). In 2021 almost 3 million plants were seized (compared with 1.7 million in 2020), which makes Spain a leading cannabis producer in Europe (ABC.es, 2022). This could be one possible factor for the decrease in herbal cannabis imports by sea from Albania to Italy. A big increase in cannabis production in Spain opens up the possibility of much cost-effective land smuggling, which is less in the focus of the police than smuggling by sea from Albania.

Case study: Albanian-speaking network involved in cannabis cultivation in Spain

In July 2021 a significant operation was conducted by Spain, Germany and the Albanian police in cooperation with Europol against an organised criminal network composed mainly of Albanian-speaking criminals suspected of cannabis cultivation and trafficking. In a coordinated operation in four different locations in Spain (Tarragona, Barcelona, Girona and Castellón), 107 people were arrested, 51 cannabis cultivation sites were found and 25 000 plants were seized. It was revealed that the criminal network had redirected the supply of electricity to the illegal cultivation of plants indoors, and in this way had stolen electricity causing the loss of EUR 1.6 million.

Source: Europol (2021b)

Serbian criminal networks appear also to be actively involved in cannabis cultivation in Spain and other EU countries, such as Czechia (Ministry of Interior of Serbia, 2019; Europol, 2021d).

Case study: Operation Mitika, Serbian network active in Spain

In July 2021, in a joint operation codenamed 'Mitika' and conducted by Spanish and Serbian police through a joint investigation team, a Serbian cannabis trafficking network was dismantled and 43 people were arrested for their involvement in the production and distribution of herbal cannabis and cannabis resin. Over 17 000 cannabis plants, 880 kg of herbal cannabis and at least 130 kg of finished herbal cannabis and cannabis resin were seized.

Source: Europol (2021d)

In 2020 the Austrian annual report on drug-related crime stated that Austrian nationals grow cannabis in boxes that are able to accommodate up to 500 plants, while larger facilities are set up by eastern European groups, mostly consisting of Serbian offenders. Criminal networks from the Western Balkans appear to have a leading position in Vienna (criminal networks from Serbia, North Macedonia, Albania, Kosovo and Montenegro), Upper Austria (Albanian-speaking groups) and Styria (criminal networks from Bosnia and Herzegovina, Montenegro, North Macedonia, Serbia, Kosovo and Albania) (Ministry of Interior of Austria, 2021).

Italy has also reported an increase in cannabis cultivation. In 2020 over 400 000 cannabis plants were seized, almost double the number seized in 2019 (Ministry of Interior of Italy, 2021). The largest seizures of cannabis plants were made in Lombardy, Apulia, Calabria, Sardinia, Sicily, Veneto and Campania. According to the same report, in 2020 ethnic-based criminal structures developed an increasing capacity and operational autonomy to control the drug trafficking trade, and the involvement of the Western Balkans was highlighted. Given the large Albanian ethnic community in northern Italy (according to [statista.com](https://www.statista.com)) and the ties between Albanian-speaking and Italian criminal networks in southern Italy, Albanian-speaking criminal networks might be associated with increased cannabis cultivation in Lombardy and Apulia, an issue that should be considered further.

A German report shows that cannabis usually comes from domestic cultivation, indoor cultivation in Belgium, the Netherlands and Spain, and also from outdoor cultivation in Albania. Criminal networks from the Western Balkans are particularly involved in the supply of cocaine but are also involved in the smuggling of herbal cannabis from Albania and Spain, the indoor cultivation of cannabis and the trafficking of heroin (BKA Bundeskriminalamt, 2021).

Criminal networks from the Western Balkans — flexible and mobile

Organised criminal networks operating in the Western Balkans have strong ties in the EU and seem to find it relatively easy to recruit from the diaspora. For example, connections of the Albanian-speaking diaspora in Italy have strengthened cooperation between Albanian-speaking and Italian criminal groups (Saggers, 2019).

According to UNODC (2020): ‘The internal structures of organised criminal groups in the Western Balkans are built around their prominent criminal activity ... Drug trafficking groups are more flexible and less hierarchical in structure, with clusters specialized in certain services (wholesale, retail) and with limited links between them (generally via one contact person) ... Evidence on the structure, operations and membership of organized crime groups collected from prisoners and court verdicts show that they tend to operate in a loose, spontaneous, and time-limited way.’

A significant number of criminal groups from the Western Balkans present in the EU countries have flexible structures whose members are linked by ethnic, territorial, family or friendly principles. Experts state that there has been a horizontal expansion of criminal groups that cooperate intensively with each other and operate regionally or in western Europe.

Potency of cannabis in the Western Balkans

The potency (strength) of herbal cannabis depends on many factors, and in particular on the location (indoor or outdoor) and cultivation method. The potency of cannabis products is expressed as a percentage of the psychoactive substance, the primary psychoactive ingredient THC. Cannabis grown outdoors usually has a lower THC content than cannabis grown indoors. The potency of cannabis plants produced indoors depends on a number of factors, including plant genetics, the environment and the age or ‘freshness’ of the product (EMCDDA, 2004).

In official statements and open sources, it is often stated — even before analysis by a forensic laboratory — that high-potency herbal cannabis has been seized. It seems that forensic laboratories in the Western Balkans rarely categorise normal herbal cannabis and high-potency herbal cannabis separately, while the experts and mass media generally present high-potency herbal cannabis as

high-quality herbal cannabis, genetically modified cannabis with high THC content, or skunk. A description of herbal cannabis, sinsemilla and skunk taken from an EMCDDA study can be found below.

Herbal cannabis: normally restricted to the fresh or (more commonly) dried leaves and flowering tops, but excluding stalk, roots and seeds of *Cannabis sativa*.

Sinsemilla: ‘without seed’ (Spanish), the highest-potency herbal cannabis comprising the flowering tops of the unfertilised female plant of *Cannabis sativa* produced in open cultivation or by indoor methods.

Skunk: herbal cannabis with a characteristic odour that has been typically grown by indoor intensive cultivation and may have a high potency. Skunk is also a generic term for any intensively grown sinsemilla. Since cannabis grown by intensive cultivation invariably derives from unfertilised female plants, this material should be called sinsemilla rather than high-potency herbal cannabis.

Source: EMCDDA (2004)

There is little information in open sources about the potency of cannabis, and only four Western Balkan countries (Bosnia and Herzegovina, Kosovo, Montenegro and Serbia) provided data on potency of herbal cannabis (see Table 8). The forensic laboratory in North Macedonia does not yet determine the potency and purity of drugs. The Serbian forensic laboratory classifies the potency of herbal cannabis as ‘above 0.3 %’ or ‘below 0.3 %’, which leads to a lack of clarity regarding the actual potency of herbal cannabis. Due to the lack of comparable data from across the Western Balkans, it is difficult to assess the overall picture.

Table 8. Herbal cannabis potency (% THC)

Country	Year	Level	Min	Max	Arithmetic Mean
Albania (UNODC, 2020)	2018	n/a		21.0	
Bosnia and Herzegovina	2019	n/a	0.06	16.3	3.9
Kosovo	2019	retail	3.4	4.8	4.1
Kosovo	2019	wholesale	3.4	5.25	4.33
Kosovo	2020	retail	3.45	4.7	4.07
Kosovo	2020	wholesale	3.53	5.15	4.34
Montenegro	2019	retail	1.16	20.3	7.51
Montenegro	2019	wholesale	2.34	14.2	6.46
Montenegro	2020	retail	0.28	19.7	5.74
Montenegro	2020	wholesale	1.19	23.2	9.73
Serbia	2019	retail	0.3		
Serbia	2019	wholesale	0.3		

Source: EMCDDA; standard tables; UNODC (2020)

The available data is for 2019-2020 and is insufficient to reflect long-term trends. Analysis of the data shows that the number of samples collected and analysed varies from country to country. The Serbian forensic laboratory analysed the greatest number of samples — 21 865 from retail and 1 737 from wholesale — but with limited accuracy, as noted above.

The lowest potency (% THC) was reported by Bosnia and Herzegovina, namely 0.06 % (2019 data), while the highest potency was reported by Montenegro (23.2 %, wholesale market, 2020 data).

The highest average potency (% THC) at the retail level was reported by Montenegro (7.51 %, 2019 data), while the lowest average potency was reported by Kosovo (4.07 %, 2020 data).

As for the average potency (% THC) at the wholesale level, the highest value was reported by Montenegro (9.73 %, 2020 data), while the lowest value was reported by Kosovo (4.33 %, 2019 data).

The data available is insufficient to distinguish between the potency of cannabis produced domestically and that of cannabis in transit. As such, given that cannabis is not adulterated, a higher potency for wholesale cannabis (probably in transit from other countries) and lower potency for retail cannabis (probably locally produced) might be expected. For example, Montenegro reported 5.74 % at retail level and 9.73 % at wholesale level for 2020.

The overall potency of cannabis from Albania — which is produced mostly outdoors — is relatively high and has been increasing from year to year, for example from 10 % in 2012 to 18 % in 2016, 20 % in 2017 and 21 % in 2018 (UNODC, 2020). Official sources have stated that in recent years the amount of genetically modified high-potency herbal cannabis (reported also as skunk) seized and trafficked has increased, without providing additional information on its potency (Ministry of Security of Bosnia and Herzegovina, 2020).

Prices — higher for indoor high-quality herbal cannabis

The price of drugs, including herbal cannabis, depends on demand and supply, production and quality, but it is also influenced by the distance between production and the final market, risk and seizures by law enforcement. Thus, the price in Serbia, Montenegro and North Macedonia rose by up to 300 % following the large operations in Albania, according to the regional SOCTA for 2016 (Ministries of Interior of Serbia, Montenegro and North Macedonia, 2016).

The prices of cannabis products in Albania might be expected to rise in 2022 due to significant seizures of plants (166 212 in 2021, according to preliminary data). It seems that cannabis prices have multiplied due to increased pressure from operations aimed at discovering and destroying cultivations (Halili, 2021a).

Table 9 shows a comparison of the wholesale prices of herbal cannabis in the period 2019-2021. As already mentioned in this study, prices can vary significantly when it comes to high-potency herbal cannabis, so price data needs to be assessed carefully as it is not reported separately for different types of cannabis (for example, indoor/outdoor). Experts stated that the price for indoor high-potency herbal cannabis is much higher than that for outdoor cannabis, and also depends on its origin.

Austria reports a price of EUR 1 500-5 000/kg for EU-grown herbal cannabis and EUR 2 000-5 000/kg for high-potency herbal cannabis (EMCDDA, Statistical Bulletin); Serbia reports that the wholesale price of high-potency herbal cannabis was EUR 3 000-4 000/kg in 2020; other open sources state that the price of herbal cannabis originating in Spain in Germany reached EUR 6 500/kg and in Sweden EUR 9 000/kg (*El Pais*, 2021). Greece provides information about the price group depending on the origin of the cannabis; thus, for 2020, Albanian-origin herbal cannabis had by far the lowest price (EUR 2 000-3 000/kg), compared with Greek-origin cannabis (EUR 3 000-4 000/kg) and cannabis of European origin¹ (EUR 4 500-8 000/kg) (Hellenic Police, 2019, 2020).

¹ European origin, e.g. high-potency herbal cannabis originating in Spain and other European countries.

Table 9. Herbal cannabis wholesale prices (min-max) 2019-2021 in the Western Balkans and some EU Member States (in EUR)

Country	2019 source: EMCDDA	2020 (Western Balkans) source: EMCDDA	2021 source: experts
Albania	1 000-1 200	1 000-1 200	1 200-1 400
Austria	1 500-5 000		
Belgium	3 400-5 500		4 000-5 000
Bosnia and Herzegovina	2 000-2 500	1 400-1 700	2 000-2 500
Croatia	1 100-2 500		2 000-2 500
Germany	4 683-5 767		3 000-7 000
Italy	2 014-2 720		2 000-4 500
Kosovo		600-800	
Montenegro	800-1 700	900-1 700	1 000-1 400
North Macedonia	500-800	1 000-1 800	1 400-2 000
Serbia	1 000-2 500	1 500-2 100	
Sweden	2 597-8 499		5 500-9 000
Spain			1 700

Source: EMCDDA Statistical Bulletin; experts; questionnaires; standard tables

At the retail level, no significant price changes were observed other than a slight increase (up to 20 %) during the COVID-19 pandemic reported by Albania, Kosovo and North Macedonia (EMCDDA, 2021).

Trafficking routes: dynamic in the whole region and beyond

South-east Europe is a very important transit area for all types of drugs, with cocaine trafficking on the rise (EMCDDA and Europol, 2022). The Balkan route is important for criminal activities, not only for trafficking drugs, but also for smuggling migrants, weapons, high-tariff goods, money and drug precursors.

Three branches of the Balkan route (see Figure 11) depart from Turkey and lead into western Europe (EMCDDA, 2015):

- The southern branch runs through Greece, Albania and Italy.
- The central branch runs through Bulgaria, North Macedonia, Serbia, Montenegro, Bosnia and Herzegovina, Croatia and Slovenia to either Italy or Austria.
- The northern branch runs from Bulgaria and Romania to Hungary, Austria, Czechia, Poland or Germany.

Figure 11. Balkan route branches through the Western Balkans



Given the dynamics of the drug market and changes noted on the Balkan route, such as increasing cocaine seizures in south-east Europe, the route can be viewed as a corridor that criminal networks use to satisfy various markets. Depending on the demand, risks and operational capabilities of criminal networks, smuggling routes appear to adapt rapidly.

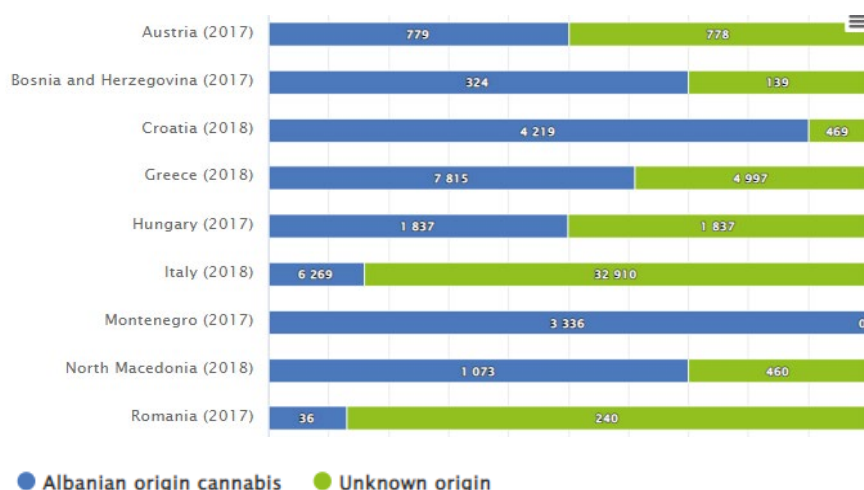
Herbal cannabis from Albania is smuggled by land to Montenegro, Kosovo and North Macedonia and further along the central branch of the Balkan route to western Europe or to Greece and Turkey on the southern branch of the Balkan route, but also by sea to Greece, Turkey and Italy.

Some countries on the route, such as North Macedonia and Kosovo, are used for warehousing and repackaging (Rama, 2021). This is why it is important to determine the origin and trafficking routes during investigations.

Some countries neighbouring the Western Balkans have seized large quantities of herbal cannabis, such as Italy (almost 20 tonnes in 2020 and 24 tonnes in 2019) and Greece (almost 8 tonnes in 2020 and 12.5 tonnes in 2019) (EMCDDA Statistical Bulletin), according to reports, some being of Albanian origin.

After significant efforts on the part of the authorities, with the support of the GDF through the aerial monitoring project, significant changes have been noted, and in 2018 the share of herbal cannabis originating from Albania appeared to decrease. North Macedonia reported a drop from 95 % of all herbal cannabis seized in its territory in 2017 to 70 % in 2018; Greece recorded a decline from 71 % in 2017 to 62 % in 2018, and Italy reported a decline from 34 % in 2017 to 16 % in 2018 (UNODC, 2020) (see Figure 12).

Figure 12. Proportion of herbal cannabis originating in Albania seized 2017-2018 (data in kg)



Source: UNODC (2020)

A rapid assessment by the EMCDDA on the impact of COVID-19 on drug markets indicated that some of the main routes for cannabis trafficking from the Western Balkans to other European destinations remained in use despite restrictions. However, since travel by motor vehicle decreased abruptly at the beginning of the pandemic, trucks were used more frequently (EMCDDA, 2021).

Land routes to the EU remain active

The Western Balkans remains an origin region for herbal cannabis reaching the EU, other neighbouring countries and Turkey. Despite a decline in the volumes, trafficking routes to the EU remain active, with Albania the main source.

Land smuggling routes go from Albania to Montenegro, Kosovo and North Macedonia to Bosnia and Herzegovina and Serbia and further across the EU external border to Croatia or Hungary to their final destinations. In cases where cannabis is trafficked into Montenegro from Albania, smugglers use official border crossing points, but also the land ‘green’ border, which in places is not well controlled. In some cases, smuggling takes place in the area of Skadar Lake and the Bojana River, which are on the border with Albania.

Smuggling through Montenegro principally takes place on the following routes: (i) Albania - Tuzi - Podgorica - Nikšić - Bosnia and Herzegovina; (ii) Albania - Tuzi - Podgorica - Pljevlja - Serbia; (iii) Albania - Ulcinj - Herceg Novi - Croatia. The most frequently used smuggling route covers the central region (via Podgorica and Nikšić) and south-western part of Montenegro (via Herceg Novi). Seizures of large quantities of cannabis made in 2021 and early 2022 show the importance of this route (see Table 10).

Table 10. Examples of herbal cannabis seizures 2021-2022 in Montenegro

Year	Month	Weight (kg)	Type of cannabis product	Route	Nationalities of people involved	Mean of transport	Place of seizure
2021	April	260	herbal cannabis	Albania-Montenegro-Bosnia and Herzegovina-Croatia-Western EU	Montenegrin	truck	BCP Vračenović i-Đeleuša
2021	January	500	herbal cannabis	Albania-Montenegro-Croatia-Western EU	Montenegrin	truck	BCP Debeli Brijeg-Karasovići
2021	February	500	herbal cannabis	Albania-Montenegro-EU		truck	
2022	January	500	herbal cannabis;	Albania-Montenegro-	Albanian	truck	BCP Božaj-Hani
		20	cannabis resin	Germany			i Hotit

Source: experts; open sources

Smaller quantities of cannabis are transferred through the northern part of Montenegro from Pljevlja, Bijelo Polje and Plav towards Bosnia and Herzegovina in the direction of Sarajevo, or towards Serbia in the direction of Prijepolje. When drugs leave Montenegro towards Bosnia and Herzegovina and Croatia, smugglers mostly use official border crossing points.

After entering Bosnia and Herzegovina from the direction of Montenegro, the route can go through Sarajevo to the north, where the main routes of the central Balkan route are border crossings with Croatia; the most important border crossing points are Gradiška-Nova Gradiška, Brod-Slavonski Brod and Gradina-Jasenovac. The second route through Bosnia and Herzegovina leads through Trebinje in the direction of the border crossings with southern Croatia.

Routes to Serbia go through Montenegro, Kosovo and North Macedonia, after which the drugs can go in the direction of Croatia, Hungary, Romania or Bulgaria. In Serbia, large quantities of cannabis smuggled in trucks have been detected.

Table 11. Example of seizures of herbal cannabis 2019-2022 in Serbia

Year	Month	Weight (kg)	Type of cannabis product	Route	Nationalities of people involved	Mean of transport (secret space/ cargo/ luggage)	Place of seizure (border-BCP, name of place)
2019	April	340	herbal cannabis	Albania-Serbia-EU	Serbian	truck	
2020	March	782	herbal cannabis	Albania-Serbia-EU		truck	BCP Vatin
2020	December	300	herbal cannabis	Kosovo-Serbia			Near Bujanovac and Niš
2021	November	520	herbal cannabis	Albania-Kosovo-Serbia		cargo van	Niš
2021	November	215	herbal cannabis		Serbian	cargo van	Brus
2021	October	321	herbal cannabis		Serbian, Montenegrin		Kraljevo
2021	May	36.7	herbal cannabis	Serbia-Croatia			BCP Batrovci-Bajakovo
2021	February	270	herbal cannabis	Serbia			Inland, highway Belgrade-Niš
2021	December	155	herbal cannabis	Serbia-Hungary		Truck	BCP Bački Breg
2022	January	130	herbal cannabis	Montenegro-Serbia		Truck	Novi Sad

Source: Ministry of Interior of Serbia (annual reports and public relations); experts

Most of the herbal cannabis sourced in Albania and Kosovo and reaching Hungary enters through the southern border with Serbia and is typically smuggled by Albanian, Montenegrin and North Macedonian citizens who cooperate with Hungarian drug traffickers. Herbal cannabis in Hungary also comes from the Netherlands and Czechia, though to a much lesser extent. Hungarian authorities report that cannabis seized in Hungary from Western Balkan sources is largely destined for Western European markets (Reitox National Focal Point of Hungary, 2020). Hungary also recorded one case of cannabis smuggling by air in 2018, when a motorised paraglider was used in an attempt to smuggle 18 kg of herbal cannabis from Serbia to Hungary (Ljubas, 2020).

Austrian authorities also reported that most of the herbal cannabis imported into Austria in 2020 originated from Albania and was imported via the Balkan route, further confirming that ‘Albanian offenders set up depots in Italy, the Czech Republic, Germany and Eastern European states along the Balkan route and export the marijuana from there to Central and Northern Europe’ (Ministry of Interior of Austria, 2021).

Case examples from countries neighbouring the Western Balkans illustrate the quantities of drugs traded by criminal networks, the interconnection of criminal networks in the Western Balkan area and the corruption and profits involved. The Tebra case from Croatia presented below is one such example. Despite the fact that cannabis production, as well as the amount of cannabis seized in the region, has fallen significantly since 2017, the values and quantities identified in this case show that the activity continues.

Case study: Operation Tebra, Croatia

In July 2019, in Zagreb, a complex criminal investigation was completed against a large and violent criminal network (23 members) suspected of smuggling at least 15.7 tonnes of cannabis towards Croatia between June 2016 and June 2019, earning at least EUR 11 million in profit. Herbal cannabis bought in Albania and Montenegro was transported to Bosnia and Herzegovina for storage in the Ljubuski area and then transferred to Croatia in cars and trucks with the help of border police officers. Cannabis was paid for not only with cash but also with luxury vehicles. In searches of apartments, houses and vehicles, the authorities seized automatic weapons and hand grenades, luxury vehicles, two vessels and EUR 28 000 in cash.

Source: Ministry of Interior of Croatia

Sea routes to Italy — evidence points to declining relevance

Italy is an important destination for Albanian herbal cannabis, which is commonly shipped from Albania and Greece by sea. In 2017 the amount of herbal cannabis originating from Albania peaked, and then declined sharply during the period 2018-2020 (Ministry of Interior of Italy, 2021). Despite the reduction in the smuggling of herbal cannabis by sea to Italy, seizures in recent years show high levels of activity on the part of criminal networks, so it is clear that drugs continue to find their way to Italy, with frequent and dynamic changes in routes and modalities.

There are other active routes in the direction of Italy. In 2020, a woman who had been arrested stated that she had worked for 45 days on cultivations in Albania and was involved in cannabis drying, cleaning, packaging and preparing for shipment to Italy (Mejdini and Amerhauser, 2022). Large quantities of herbal cannabis may be transported from Montenegro to Italy by boat (sprint.al, 2017).

The reduction in cultivation seizures in Albania correlates with the decline in herbal cannabis seizures in Italy. While cannabis continues to be transported to Italy (see Case study: Herbal cannabis transported by dinghy) via the Adriatic from Albania and Greece, it appears that these routes have lost their importance (Ministry of Interior of Italy, 2021). There has also been a significant decrease in seizures of cannabis resin and herbal cannabis in national and international waters (in both the Tyrrhenian and Adriatic waters), with almost a 70 % reduction at the maritime border in 2020. At the same time, seizures of herbal cannabis at land border crossing points increased by 181 % compared with the figures for 2019. This may suggest that herbal cannabis is being sourced from other countries, for example Spain. Albanian State Police officials said at an annual press conference with their Italian partners that no speedboats carrying cannabis had reached the Italian coast in 2021 (Halili, 2021a); although smuggling attempts took place, they were successfully prevented. In May 2021 Albanian police, in cooperation with the GDF and US Delta Force, seized a speedboat in Vlora loaded with 577 kg of cannabis heading for Italy. This was the fourth time that a large amount of drugs was seized in Albania in collaboration with the Italian and US authorities (exit.al, 2021a).

Case study: Herbal cannabis transported by dinghy

Tourist businesses can be used to transport herbal cannabis to Italy. This was the case with one particular local man from Vlora, Albania, who owned a small fleet of dinghies that were purchased for tourists and converted to transport drugs across the Adriatic. According to this individual, it costs EUR 250-300/kg to smuggle cannabis to Italy, so he would receive EUR 25 000-30 000 for a delivery of 1 tonne. He also offered transportation to Malta or Turkey, but the price was higher.

In June 2020 Italy and Albania conducted Operation KULMI against 37 individuals suspected of international drug trafficking and seized assets worth EUR 4 million. The investigation targeted two criminal networks (one active in Italy and one in the Netherlands) that acquired herbal cannabis from an Albanian citizen who was in contact with suppliers in Albania, North Macedonia, Belgium and the Netherlands. Dinghies were used to transport the drugs across the sea from Albania to Italy (Apulia).

Similarly, in Operation BEACHED, completed in June 2020, an Italian-Albanian group involved in trafficking large quantities of herbal cannabis was dismantled. The drugs reached Italy after being transported across the Adriatic in rubber dinghies; they were sold on the streets in the provinces of Brindisi and Taranto and to buyers in the northern and central regions of Italy. Seventeen individuals were arrested and 4 tonnes of herbal cannabis seized.

Source: Ziaj (2021); Ministry of Interior of Italy (2021)

Large quantities of herbal cannabis were found off the coast of Croatia during the period 2013-2019, with a peak in 2018 when almost 2.4 tonnes and 41 kg of cannabis resin was recovered (see Table 12). However, no such cases were reported in 2020 and 2021. It is presumed that most of the seizures represent failed attempts to transport herbal cannabis from Albania to Italy.

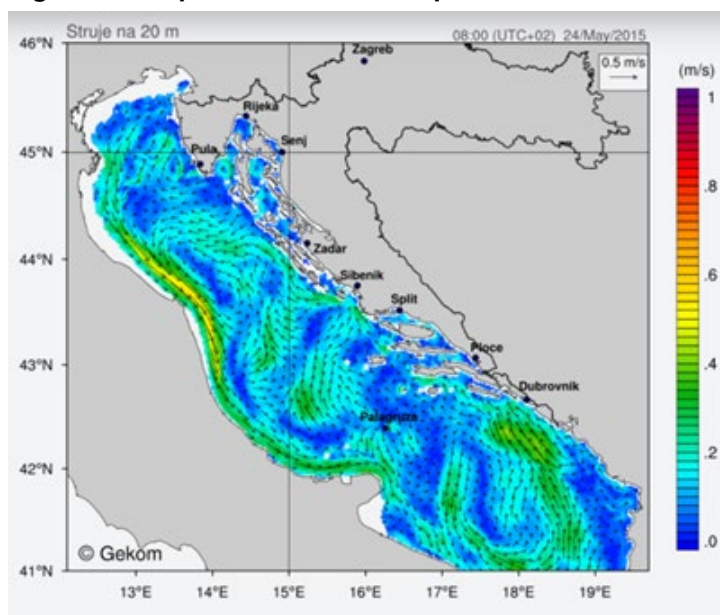
The atmospheric conditions that prevail in the Adriatic area can cause strong southerly winds, waves and sea currents. This, combined with increased action by national agencies of the states monitoring the sea in the Mediterranean and Adriatic, may account for the amount of cannabis packages discarded and/or lost at sea (see Table 12 and Figure 13).

Table 12. Herbal cannabis discovered in the Croatian territorial sea and on the coast in 2018 (the same colour indicates the events that are probably related)

2018 (month)	Location	Herbal cannabis (kg)
January	Lastovo	70
February	Korčula	50
March	Korčula	47
March	Korčula	45
March	Lastovo	76
March	Vis	25
March	Dubrovnik port, Lokrum, Koločep	609
March	Šipan, Tri sestrice, Mljetski kanal	916
March	Pelješac	74 (+41 kg cannabis resin)
March	Hvar	47
March	Pelješac	27
April	Konavle	43
April	Veli Lošinj	67
April	Korčula	11
April	Mljet	26
April	Savudrija	35
April	Lastovski kanal	39
November	Pelješac	72
November	Mljet	47
November	Korčula	36
November	Pelješac	5

Source: Ministry of Interior of Croatia

Figure 13. Map of currents at a depth of 20 m in the Croatian territorial sea



Source: AZU (<https://www.azu.hr/za%C5%A1tita-okoli%C5%A1a/strujanja-u-jadranskom-moru/>)

The two main sources of herbal cannabis in Italy seem to be Albania and Spain, and according to some experts, the demand for cannabis from indoor cultivation from Spain has increased due to its higher quality. This finding should be taken into consideration together with the increased involvement of the Western Balkans in the EU, particularly in Spain (see section Relocation of cannabis production to the EU). It should not be excluded that criminals from the Western Balkans moved the production in Spain and are using existing criminal connections to transport cannabis from Spain to Italy.

The route from Albania to Malta may become more important since Malta, in 2021, became the first European country to allow limited cultivation and possession of herbal cannabis for personal use, opening up new opportunities for organised crime groups. An increase in cooperation between Maltese and Western Balkan criminal groups cannot be excluded.

Case study: Operation La Vallette — Albanian cannabis going to Malta

In December 2021 a major Malta-Italy drug ring was exposed in Italian court documents, which detail how cocaine and cannabis were smuggled to the island using a local ferry company before being hidden in a fruit and vegetable shop in the town of Attard. Italian law enforcement arrested 16 people, including a Maltese national, for moving large quantities of cocaine and herbal cannabis from Albania to Italy and eventually to Malta. A total of 430 kg of herbal cannabis, cannabis resin and cocaine was seized by the Italian GDF.

Source: Martin (2021)

In a few cases in 2020, several different cannabis products were trafficked to Italy from Albania in the same consignment. For example, in February 2020 Italy seized 450 kg of herbal cannabis, 75 kg of cannabis resin and 3.5 litres of cannabis oil in the same shipment (Kote, 2020), while in April 2020 Italian authorities arrested two Italians for smuggling 646 kg of herbal cannabis and 250 kg of cannabis resin (Guardia di Finanza, 2020); in both cases, the departure point appears to have been Albania.

Sea and land routes to Greece

Greece is a country where herbal cannabis is produced, but also a destination and transit country for herbal cannabis originating in Albania (high-potency herbal cannabis). According to the Hellenic Police, 48 % of the cannabis seized in 2020 was from Albania (71 % in 2017 and 62 % in 2018) (Hellenic Police, 2020).

Cannabis transiting Greece may go to Turkey, Italy and other EU countries. Cannabis seized in the country is smuggled by land mainly from Albania, and there is another important route from North Macedonia. In addition to the land route, cannabis is also smuggled by sea on speedboats and dinghies in the direction of Greece and across Greek territorial waters to Turkey. According to research conducted as part of this study, experts from the Western Balkans emphasise the growing importance of routes where the final destination is Turkey.

Forms of concealment in road vehicles on all land routes are common: drugs are placed between legal cargo, or transported in personal vehicles and trucks with built-in secret hiding places, for example in the vehicle or fuel tank, in the form of a double wall, roof or floor. Smuggling in camper vehicles with specially designed hidden compartments was also noticed, and the same modality has also been observed by Italian law enforcement.

Smuggling of cannabis while avoiding border crossings is carried out mainly by smugglers who cross the border illegally on foot carrying bags loaded with herbal cannabis weighing about 50 kg. Even with a significant drop in cannabis production in Albania in 2018, Greek police have recorded significant smuggling activities in the border area on the country's north-western border with Albania. During 2018 and 2019 the police seized 9 tonnes of herbal cannabis of Albanian origin, and in the border area in the first half of 2020 they seized 1.5 tonnes (Koukoumakas, 2020).

Most members of criminal networks who trade cannabis in Greece are Greek citizens (approximately 51 %) or Albanian citizens (approximately 31 %). As noted above, cannabis is also smuggled from Albania to Greece by speedboat (keptalkinggreece.com, 2019), sometimes with final destinations in Turkey (Hellenic Police, 2020). For example, in October 2020, Greek police seized a speedboat loaded with 1.2 tonnes of herbal cannabis en route from Vlora to Turkey (Halili, 2020).

Sea and land routes to Turkey — impacted by COVID-19, but still active

Herbal cannabis is smuggled into Turkey by sea (via Greece or directly) and by road on the following routes: (i) Albania - (by sea or land) - Greece - Turkey; (ii) Albania - (by land) - North Macedonia - (by land) - Bulgaria - (by land) - Turkey; (iii) Albania - (by land) - Kosovo - (by land) - North Macedonia - (by land) - Greece - (by sea or land) - Turkey; and (iv) Albania - (by land) - Kosovo - (by land) - Serbia - (by land) - Bulgaria - (by land) - Turkey.

According to Turkish authorities, the amount of cannabis seized in 2020 increased by 3.5 % compared with 2019, but high-potency herbal cannabis seizures decreased in 2020 by 47 % compared with 2018 and by 78 % compared with 2019. The operational studies carried out by Turkish authorities regarding high-potency herbal cannabis trafficking, especially from the Balkans to Turkey by sea, and the measures taken due to the pandemic have led to trafficking activities in this direction being significantly reduced (Ministry of Interior of Turkey, 2021).

However, 2021 data shows that the increase in drug seizures in the direction of Turkey is significant and emphasises the importance of all routes to Turkey. In one case, 1.5 tonnes of Albanian-origin high-potency herbal cannabis was seized in the south-western Turkish province of Muğla (dailysabah.com, 2021).

Case study: Herbal cannabis by sea to Turkey

In October 2020 Greek police arrested two Albanian nationals and seized a boat and 1.2 tonnes of cannabis near the Gythio area on the route from Vlora to Turkey.

In September 2019 the Greek coast guard discovered 103 boxes containing more than a tonne of herbal cannabis in a cave on the islet of Piperi, in the Northern Sporades archipelago. Three boats were seized by the police authorities, all believed to be part of a network of illegal drug smuggling from Albania to Turkey. After delivering cannabis, smugglers may return to Albania with large amounts of heroin.

Source: Halili (2020); Kampouris (2019)

By land, herbal cannabis is transported to Turkey from Albania through Bulgaria. Seizures of herbal cannabis by customs in Bulgaria increased in 2020 from the previous year; at the country's borders, 2.2 tonnes of herbal cannabis was seized, 32 % more than in 2019 (Xinhua, 2021; National Customs Agency of Bulgaria, 2021). Bulgarian customs data shows that three times more drugs were seized in 2021 than in the previous year. Customs seized 7.5 tonnes of herbal cannabis, an increase of more than 300 % compared with 2020 (National Customs Agency of Bulgaria, 2022). According to public sources and experts, most cannabis is in transit from the Western Balkans to Turkey, and seizures at the country's south-western border also show a trend of small quantities of cannabis being smuggled in private vehicles (novinite.com, 2021).

The reverse Balkan route is also important due to the exchange of heroin and cannabis, a point emphasised by Western Balkan experts. According to experts from Albania, traffickers have expanded their routes to Turkey, which has become a herbal cannabis destination. Herbal cannabis is sold in Turkey for around EUR 2 000-3 000/kg, where it is exchanged for heroin for EUR 9 000/kg. This exchange not only facilitates the involvement of Balkan criminal groups in the heroin trade, but is also lucrative, as heroin can be sold for EUR 13 000-15 000/kg. Cannabis arriving in Turkey can also be transported by land through North Macedonia, as confirmed by experts.

The reverse path from west to east is also the path for the transport of acetic anhydride, a precursor used to produce heroin. Seven people were arrested in Croatia in 2018 for smuggling acetic anhydride, heroin and herbal cannabis. From 2017 to 2018 a criminal network with members from Croatia, Bosnia and Herzegovina, Germany and Turkey smuggled 5 000 litres of acetic anhydride from Poland to Turkey and brought quantities of heroin back to Croatia. In Bosnia and Herzegovina they bought larger quantities of herbal cannabis, which they smuggled into Croatia and Germany for resale. The criminal activity was facilitated through the establishment of legal business structures for transport and storage (Ministry of Interior of Croatia, 2018).

Perhaps surprisingly, there are also examples of cannabis products being trafficked from the EU to the Western Balkans. For example, there are indications that cannabis seedlings from the EU may have been transported to the Western Balkans for cultivation. In January 2022 Croatian police seized 1 096 cannabis seedlings at the border with Montenegro from a truck that had a final destination of North Macedonia (Ministry of Interior of Croatia, 2022). In June 2022 Spanish police dismantled an organised criminal network cultivating cannabis for many European markets, including the Serbian drug market (Spanish News Today, 2022).

Planes, trains, river boats — they may go under law enforcement radar

In addition to traditional forms of transport of smuggled illegal goods, new technologies are reportedly used by organised crime networks to carry out criminal activity as quickly and as safely as possible. Hierarchically organised criminal networks have large amounts of money at their disposal, so smuggling methods can be expected to be improved using new technologies.

For example, more use can be expected of air or water drones moving cannabis or other type of drugs in the Western Balkans and to the EU/neighbouring countries. Attention should also be paid to private planes, which can transport significant quantities of drugs. Transporting cocaine by plane is fairly well established, but few cases are reported, meaning that either the criminal networks do not use this means of transportation very often, or it is not detected.

A few case examples have been noted over the years:

- 2014: In the Divjaka area, Albanian police arrested two persons for attempting to traffic cannabis towards Italy, after their plane crashed (Mejdini, 2016).
- 2015: During an anti-drug operation codenamed 'Free Flight', Italian and Albanian police found an aircraft used for cannabis trafficking in Brindisi and 14 traffickers were arrested in Albania and Italy (ocnal.com, 2015).
- 2018: Hungary recorded one case of cannabis smuggling by air when a motorised paraglider was used in an attempt to smuggle 18 kg of herbal cannabis from Serbia to Hungary (Ljubas, 2020).
- 2021: A small plane crashed in Vermosh near the Montenegrin border, in an area known for cannabis cultivation; the pilot and passenger were not found (exit.al, 2021b).

Information in open sources suggests that smuggling takes place by air to Italy. According to a *BalkanInsight* report: 'The Piper planes favoured by smugglers are light, single-engine, two-seater aircraft that can carry up to around 500 kilograms and fly up to 1 600 km without refueling. ... traffickers just drop large quantities of drugs in Puglia, where their collaborators on land wait for it' (Nabolli, 2016). The use of aircraft (helicopters, light aircraft, etc.) in cannabis smuggling from Albania to Italy has also been noted during EU-level strategic analyses of drug markets (EMCDDA and Europol, 2019).

Rail transport is another traffic flow that should be considered because it connects seaports that are entry points for large quantities of all types of drugs. The movement of legal goods from seaports to rail is, in fact, controlled only in ports.

A case example from Greece shows the importance of rail routes in drug smuggling. In April 2021, 4 tonnes of cannabis resin was seized in a container in the port of Piraeus, Greece, after arriving from Lebanon. According to the bill of lading, the container was to be transhipped via a train passing through North Macedonia, Serbia and Hungary, with a final destination in Slovakia (maritime-executive.com, 2021).

The Danube waterway also seems to be an under-investigated transportation route, so experts have suggested that it should be given more consideration, in view of the weak control exerted by law enforcement agencies. Smuggling along the Danube is not a new phenomenon, however. In July 2012 a seizure of 66 kg of cocaine was made at Ruse, a Bulgarian port on the Danube River (UNODC, 2014). The Danube is navigable for more than 2 400 km through 10 countries and could be a convenient smuggling route. For example, Serbian customs record the smuggling of large quantities of petroleum products on the waterway between Romania and Serbia (Glas Slavonije, 2018).

In view of the above, these forms of smuggling should be considered a threat; the level of that threat should be assessed through the international exchange of intelligence. Little data was collected on this point during the study, and it is apparent that additional research is needed in the future.

Final thoughts

Cannabis cultivation and trafficking in the Western Balkans is a topic that requires continuous monitoring. The data available is often limited and is insufficient to provide sound conclusions and actionable recommendations.

Cooperation between the EU agencies and the Western Balkans should be strengthened. For example, the EMCDDA should continue to collect routine data from the Western Balkans and support the alignment of the national data with EU standards, while Europol should focus on international joint investigations and operational information relating to cannabis cultivation in the EU. Similarly, cooperation between the neighbouring countries needs to be strengthened in terms of faster operational cooperation and the establishment of joint investigations.

A proactive rather than reactive approach in the strategic and operational areas, and the use of an intelligence-led model, would result in a greater impact being made against the leaders of criminal networks.

The authorities in the Western Balkan countries should improve data collection and adapt their national data systems to EU standards. For example, data on indoor and outdoor cultivations is poorly managed and is not found in annual reports. In some countries, plant seizures are not reported by the number of plants seized, but by the weight of the total amount of herbal cannabis seized, complicating comparisons with other countries. It is also difficult to know how much herbal cannabis is in transit and how much comes from domestic cultivation. Similarly, there is no clearly disaggregated data on herbal cannabis and high-potency herbal cannabis, while experts frequently make the distinction. In the same way, the forensic laboratories should align their procedures with EU standards. The quality of data could be improved through training sessions and workshops relating to data collection.

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