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CRIMINOLOGICAL CHARACTERIZATION OF ENVIRONMENTAL CRIMES IN THE FIELD OF SUBSURFACE RESOURCES PROTECTION

Purpose. To study environmental crimes in the field of subsurface resources protection and provide their criminological characterization, namely, to determine criminological indicators reflecting the studied crime rate, dynamics and structure.

Methodology. A system of general scientific and special methods and approaches ensuring an objective analysis of the studied issue, particularly, logical and dogmatic, systematic, documentary, and modeling and statistical analysis methods.

Findings. We determined absolute, mean and relative indicators of environmental crimes in the field of subsurface resources protection in Ukraine during 2002–2021, their total recorded number (9118 crimes), annual average (456 crimes) and share in the overall crime structure over the past 20 years (0.1 %). The conclusion shows a significant growth of environmental crimes in the field of subsurface resources protection in the overall crime structure (from 0.01 to 0.24 %) due to a significantly higher increase in these crimes rate compared to the absolute overall crime rate. The calculated dynamics indicators showed wave-like changes in the recorded crimes number against their steady overall upward trend – over the twenty-year period analyzed, reported crimes of this category increased more than 14 times.

Originality. Following a long-term statistical analysis, since illegal amber mining criminalization, the article provides the first criminological characterization of environmental crimes in the field of subsurface resources protection.

Practical value. The authors substantiate their understanding of the essence of this crime category envisaged by Article 240 of Ukraine's Criminal Code "Violation of the Rules for Subsurface Resources Protection or Use, Illegal Extraction of Mineral Resources" and Article 240¹ of Ukraine's Criminal Code "Illegal Mining, Sale, Acquisition, Transfer, Sending, Transportation, and Processing of Amber". The calculated indicators of the rate, dynamics and structure of the studied crimes are of standalone significance for academic research and law enforcement activities and create an appropriate basis for the information provision of combating environmental crimes in the field of subsoil protection being a prerequisite for developing an appropriate system of specified crime prevention measures.

Keywords: *crimes in the field of subsurface resources protection, subsurface resources use, crime indicators, rate, dynamics, structure*

Introduction. While Ukraine is currently passing through a very challenging historical period of being transformed into a European-level state, Ukraine's environmental issues not only remain relevant but are also becoming far more urgent expanding on a global scale, and becoming even more socially threatening both for Ukraine and for the whole world. Environmental crime is one of the crucial factors entailing these issues, with crimes in the field of subsurface resources protection being its constituent which, in particular, takes the form of illegal mining of nonrenewable natural and mineral resources and development of mineral deposits. The threat posed by the environmental crimes under study stems not only from the current intensity and prevalence rates of crimes in the field of subsurface resources protection, among which there are violations of the rules for subsurface resources protection or use, illegal extraction of mineral resources (Article 240 of the Criminal Code of Ukraine) and illegal mining, sale, acquisition, transfer, sending, transportation, and processing of amber (Article 240¹ of the Criminal Code of Ukraine) [1], but also from changes in the nature of the mentioned crimes. Among such changes we should mention commercialization and professionalization of such crime, corruption and transnational ties which these crimes involve, and this may lead us to the conclusion that crime of this type has been transformed into more organized crime forms. Obviously, to counteract such crimes (as well as any other crimes) efficiently, proper information support of such activities is requisite, primarily,

clear vision of the current situation as regards this phenomenon and its determining factors. Therefore, for criminology it is an urgent task to explore and solve the issues relating to criminological characterization of environmental crimes in the field of subsurface resources protection.

Literature review. Research conducted by various authors and focused on the issues relating to criminological characterization of environmental crime, including crimes in the field of subsurface resources protection, formed a significant body of research data. In the national criminological literature, issues relating to the situation with and the trends in the development of environmental crime in Ukraine were the focus of research by T. V. Korniakova (2011), H. S. Polishchuk (2006), Yu. A. Turlova (2018), L. S. Khmurovska (2011) and other researchers. Criminological bases of combating subsurface resources related crime were explored by M. H. Maksimentsev (2019) in his Dr. Habil.

Unsolved aspects of the problem. While the weight of the contribution made by the above-mentioned researchers to resolution of the stated issues and the unconditional value of prior research work in this field is undoubted, some of the problematic issues in this domain are still insufficiently explored, and issues of criminological characterization of environmental crimes in the field of subsurface resources protection were incoherently covered in the national literature in prior periods and mostly in terms of one of the environmental crime elements. Besides, given the significant transformative processes of a criminological nature occurring in the field under study in recent years, and also given the changes relating to regulation of the relevant social relations under criminal law,

we believe that research into the current situation with environmental crimes in the field of subsurface resources protection is relevant and worthy to be done at an in-depth level.

The **purpose** of the article is to provide criminological characterization of environmental crimes in the field of subsurface resources protection, particularly, based on official statistical sources, to conduct a long-term analysis of the situation with these crimes and to determine the relevant criminological indicators reflecting the rate, the dynamics and the structure of the crimes under study; this objective has a stand-alone value both in terms of academic research and law enforcement activities, and is a prerequisite for developing an appropriate system of crime-preventive specified measures.

Research methods. The methodological basis of the research is a system of general scientific and special methods and approaches which ensured an objective analysis of the subject matter under study. More specifically, the logical and dogmatic method was applied to analyze the criminal law provisions establishing liability for environmental crimes in the field of subsurface resources protection, through the prism of compliance with the formal logic rules, which allowed determining their content clearly and unambiguously and formally outline the scope of the corresponding real-life phenomena. The system method allowed exploring certain aspects of such a complex social phenomenon as crime in the field of subsurface resources protection, and was useful in determining the system of environmental crimes in the field of subsurface resources protection, as well as in distributing them by offence targets. The modeling method is used as an important source of information support for the criminological analysis of crime in the field of subsurface resources protection by studying the model and making a possible further extrapolation of the results obtained to the original object. At the specific research level, the statistical analysis method was applied to analyze and generalize statistical reporting data to determine specific quantitative and qualitative parameters reflecting the prevalence rate of crimes of the said category, with further criminological interpretation of the obtained results.

Results. The Ukrainian subsoil is rich in natural resources; in particular, the country possesses the major potential of available mineral resources among other countries worldwide. The use of subsurface resources accounts for a significant share of the country's economy, as evidenced by the fact that more than two thousand mining, beneficiation and processing enterprises operate on the basis of these deposits [2]. At the same time, there is a reverse side of subsurface resources use, shadowy and illegal, which is equivalently large-scale, and its criminal component poses the highest threat for both the environment and society. The type of crime under study has such a characteristic as objective functionality which stems from some properties of its essence. Thus, our activity as humans to a greater extent is done under constant interaction with natural environment. It can be said that crime in the field of subsurface resources protection is essentially a continuation of "normal" subsurface resources use and one of the activity forms which, given its efficiency, was selected by society as its development progressed and entrenched as a possible model of behavior. Generally, environmental offences, including those of the category under study, are some of the ways to satisfy human needs. It is obvious that by committing such crimes, a person may ensure his or her financial security, which can be seen most clearly in crimes of illegal appropriation of natural resources (hunting, fishing, plant, mineral resources), and satisfy his or her vital needs. Therefore, the existence and development of environmental crime (and other deviant behavior in this area, namely, criminal use of subsurface resources) means its objective functionality, because otherwise it would be ignored in the course of social development [3].

Following an analysis of criminological information sources which illustrate the large scale of today's criminal use of subsurface resources, namely, its prevalence rate, transfor-

mational processes and dangerous development trends, we have sufficient grounds for the conclusion that the mentioned situation also calls on the State and society to respond adequately to the existing threats. Given the systemic nature of the studied type of crime as a phenomenon, the response measures should be systematic and comprehensive, and they should be fulfilled through the development and implementation of an efficient strategy to counter the mentioned offences, with one of its efficiency prerequisites being appropriate information support as regards the object of such activity which comprises as its component criminological characterization of environmental crimes in the field of subsurface resources protection.

Before proceeding to the exploration of the immediate subject of our research, we believe that it would be appropriate to outline its most adequate terminological definition and interpretation of the term "criminological characterization".

As with many other key concepts of criminology, research studies have different understanding of the concept of "criminological characterization" and its constituent elements. Having no intention to analyze all of the judgments expressed in research literature on the meaning of the concept "criminological characterization" (which is a separate subject matter of criminological research) and summarizing the opinions of famous national and foreign researches, we would like to note that in science the term "criminological characterization" is interpreted in a broad and narrow sense. The broad interpretation simultaneously covers crime prevention, while in the narrow interpretation "criminological characterization" and "prevention" are considered separately. The dictionary definition of the term "characterization" is description, analysis, evaluation of certain phenomena, distinctive features of someone or something; description, definition of essential, characteristic features and signs of someone or something. Therefore, the phenomenon under study should define the meaning of the concept "criminological characterization". Where criminological characterization of crime is concerned, this concept should contain information about the regularities with which crime functions of as a social phenomenon, and also about its indicators, characteristic features, relationships, etc. We believe that when exploring the issues related to criminological characterization of crime, it is inappropriate to focus on the features of criminological characterization of a criminal as a personality (individual types), criminogenic determinants and measures to prevent crimes, because each of the mentioned objects of criminological research, along with crime, is an independent element of the criminology subject [3].

Therefore, the authors understand criminological characterization of environmental crimes in the field of subsurface resources protection as the description and analysis of characteristic features, regularities and signs of the mentioned offences by determining the summarizing indicators which demonstrate the statistical prevalence rate, intensity, structure and trends of crimes of the mentioned category. Therefore, criminological characterization of crimes in the field of subsurface resources protection is contingent upon obtaining of objective information about the rate, structure, geography, intensity (including in the regional dimension), dynamics and the forecast regarding crimes of this category, and also evaluation of their latency rate.

For a study on criminological characterization of environmental crimes in the field of subsurface resources protection, it is necessary to clearly define the range of these offenses and separate them from other environmental crimes, and we believe that this should be done depending on the specifics of the relevant objects, i. e., the relations in the field of interaction of society and the surrounding natural environment.

According to the authors' vision of the system of environmental crimes [4], the category of crimes in the field of subsurface resources protection is formed at the second stage of classification by the criterion of the local target of offence, i. e.,

social relations in the field of protection of certain natural environment elements, and is represented (at the time of this publication) by criminal practices indicated by Article 240 of the Criminal Code of Ukraine “Violations of the Rules for Subsurface Resources Protection or Use, Illegal Extraction of Mineral Resources”.

At the same time, there is an innovation to criminal laws, particularly, the article which supplemented the Criminal Code of Ukraine according to the Law of Ukraine dated December 19, 2019 No. 402-IX “On Amendments to Some Legislative Acts of Ukraine to Improve the Laws on Mining of Amber and Other Minerals” [5], which entailed changes to the concept under study “environmental crimes in the field of subsurface resources protection”.

The new special provision (Article 240¹ of the Criminal Code of Ukraine) is titled “Illegal Mining, Sale, Acquisition, Transfer, Sending, Transportation, and Processing of Amber” and consists of three parts: part one establishes essential elements of the crime, lists the relevant acts and describes the category “illegal”, i. e. “the origin of which is not characterized by legality proved by relevant documents”; parts two and three provide for classified elements of the crime (with aggravating circumstances, namely, repetitive, large-scale crimes, or crimes committed in the territories or against targets of the nature reserve fund) and particularly classified elements of the crime (with particularly aggravating circumstances, namely, crimes committed by an official by means of using his/her official position) and entrench the types of the mentioned crime [6].

However, the mentioned innovation to criminal laws has certain shortcomings. Illegal amber mining is known to be closely connected with the activities of transnationally and economically organized groups which smuggle mined amber for extra profits. Therefore, it would be logical to respond to this situation adequately by means of criminal law.

At the same time, disposition of Article 201 of the Criminal Code of Ukraine “Smuggling” provides that amber is not an object of smuggling. It would be logical to anticipate a correction of the said situation by adoption of the above-mentioned Law of Ukraine “On Amendments to Some Legislative Acts of Ukraine to Improve the Laws on Mining of Amber and Other Minerals” [5]. Nonetheless, the current version of the new provision – Article 240¹ of the Criminal Code of Ukraine which, according to the above-mentioned law, establishes essential elements of the crime and lists the relevant acts, in its part one does not contain such a sign as amber smuggling. Furthermore, this law ignored the proposals contained in the draft laws prepared earlier [7, 8] for supplementing Article 201 of the Criminal Code of Ukraine “Smuggling” with the relevant provisions which allowed classifying movement of amber across the customs border of Ukraine outside of customs control or with concealment from customs control as smuggling. Given that today the Criminal Code of Ukraine actually does not provide for any criminal liability for movement of amber across the customs border of Ukraine outside of customs control or with concealment from customs control, it is reasonable to criminalize the mentioned illegal operation with amber by appropriately supplementing Article 201 of the Criminal Code of Ukraine “Smuggling” [6].

Summarizing the above and given the mentioned innovation, environmental crimes in the field of subsurface resources protection in terms of criminal law regulations are covered by the acts provided for in Articles 240, 240¹ of the Criminal Code of Ukraine [1].

It is noteworthy that this understanding of the said crime category is not the only possible one. Thus, exploring crime in the field of subsurface resources use, M. H. Maksimentsev singles out three types of criminal practices defined juristically by Articles 240, 244 and 298 of the Criminal Code of Ukraine, which he determines as the main practices that make up the act and function basis of crime in the field of subsurface resources use [9]. Accordingly, in contrast to the authors’ under-

standing of the category under research, M. H. Maksimentsev, sticking to the opinion that the underground space of the continental shelf is a component of the subsurface resources protected by laws of Ukraine, reckons violations of the laws on the continental shelf of Ukraine (Article 244 of the Criminal Code of Ukraine) among crimes in the field of subsurface resources use (excluding the crimes mentioned in Article 240 of the Criminal Code of Ukraine). Furthermore, given that the essence of subsurface resources use also covers the activities involving extraction, creation, and exploitation of anthropogenic objects which are located in the subsoil but are not its natural components, M. H. Maksimentsev believes that illegal exploration works at an archaeological heritage site (Article 298 of the Criminal Code of Ukraine – with regard to the acts involving penetration into the subsoil) should also be reckoned among crimes in the field of subsurface resources use [9].

Differences in the understanding of elements comprising crimes of the mentioned categories may largely result from differences in their essence, as it is also demonstrated by the relevant terminology. This is also noted by M. H. Maksimentsev, who asserts that “in the relations of subsurface resources use, the dominant teleological component is the economic one; the environmental component is expressed implicitly, as an addition. In contrast to this, in the relations of subsurface resources protection the environmental component prevails over the economic one and is the major component. Therefore, relations of subsurface resources use as an object protected by criminal law are complex relations in the field of governmental accounting of subsurface resources, their geological study and exploration, circulation of geological data, licensing of subsurface resources use, distribution of mining products, use of subsurface resources (including norm-setting and standardization of minerals extraction), optimization of location, maintenance, operation, liquidation and conservation of the subsoil mining infrastructure, area reclamation in places of subsurface resources use, and management of mining waste. Alongside, relations in the field of subsurface resources protection are relations aimed at preserving subsurface resources as the basis of environmental well-being of population and maintenance of natural environment which is favorable (optimal) for human life in terms of its quality” [9].

Therefore, from the perspective of the authors’ understanding of environmental crimes in the field of subsurface resources protection, among which it is reasonable to reckon the crimes with a type-specific difference stemming from a local target of offence, in particular, social relations in the field of subsurface resources protection as a separate element of natural environment, and based on the official statistical data available from the Interior Ministry of Ukraine and the Prosecutor General’s Office of Ukraine, let us analyze the key indicators of criminological characterization of the mentioned crimes in Ukraine.

Statistical processing of empirical data should be preceded by selection of the period under research. A review of monographic papers and theses in criminology prepared in Ukraine in recent years shows that to a large extent the research underlying them was incoherent, covered an insignificant period of time, and the data obtained did not meet the representativeness requirements. Therefore, to increase the reliability of the results obtained, it is reasonable to make a long-term (15 or more years) criminological analysis of environmental crimes in the field of subsurface resources protection in Ukraine [3].

2002 was chosen as the initial year of the analyzed period – the first full year after entry into force of the Criminal Code of Ukraine whose provisions establish the system of the crimes under consideration. It is reasonable to start the analysis of the situation with crimes in the field of subsurface resources protection by determining the crime rate and identifying the general development trends and its manifestation specifics during the period under research.

The related calculations afford ground to assert that the rate of recorded environmental crimes in the field of subsur-

face resources protection is low. The overall data available from the statistical reports – Form No. 1 of the Interior Ministry of Ukraine “On Crime in the Territory of Ukraine”, “Uniform Crime Report”, “Crime Report” and Form No. 1 of the General Prosecutor’s Office of Ukraine “Uniform Report on Criminal Offenses” [10] show that during the entire period 9,118 crimes analyzed under research were recorded.

Based on the calculation of the simple arithmetic average, we may establish the annual average of the absolute number of registered (recorded) environmental crimes in the field of subsurface resources protection and characterize the typical size of the attribute under study, i.e., the summarizing indicator demonstrating the mean of the population attribute for a specific period. In 2002–2021, this value totaled 456 environmental crimes in the field of subsurface resources protection; 440 crimes punishable under Article 240 of the Criminal Code of Ukraine “Violation of the Rules for Subsurface Resources Protection or Use, Illegal Extraction of Mineral Resources”; 161 crimes punishable under Article 240¹ of the Criminal Code of Ukraine “Illegal Mining, Sale, Acquisition, Transfer, Sending, Transportation, and Processing of Amber”.

As for the crime dynamics, it should be noted that this indicator reflects changes in the rate, intensity, structure, structural elements of the latter and any other of its attributes during a specific time in a specific territory. The dynamics is calculated using two main methods – chain and base ones. Where the first method is used, the crime rate in a specific period is compared with the previous ones; in the base method, several periods under study are compared with one and the same period from the beginning of the calculation. The dynamics is also illustrated using absolute and relative indicators, such as absolute increase (decline) in the crime rate, the rate of crime dynamics and the rate of crime growth (decline). It is worth noting that reproduction of a relatively stable, statistically steady number of environmental crimes and their dynamics convincingly testify to the social nature of environmental crime [3] and its individual types.

Absolute values of environmental crimes in the field of subsurface resources protection recorded in 2002–2021 and the calculated relative indicators of the dynamics (base and chain growth rates) are shown in the table below.

The given data show that over the twenty-year period analyzed, the array of recorded environmental crimes in the field of subsurface resources protection grew by 1.318 % (respectively, until 2002 the growth rate was 1.418 %), i.e., more than 14 times. The most rapid growth in the rate of such crimes was observed in 2003 – the growth rate year-on-year was 287 % (given that the minimum crime rate was observed in 2002 – 55), and also in 2013 – the growth rate was 212. We believe that we can agree with the opinions expressed in criminological literature [3] regarding the reasons of such growth which are most likely the stricter discipline requirements to the recording and registration procedure introduced by top administrative officials of law enforcement agencies, and intentional manipulations of statistics. This is especially relevant for environ-

mental crimes in the field of subsurface resources protection, which generally have no victims recognized under procedural rules and most of which are committed under vague circumstances.

The most noticeable declines in the absolute indicators of the crime category under research occurred in 2007, 2011, 2012 and 2017 – the decline rate was 89, 82, 60, and 63 %, respectively.

The analyzed indicators of the dynamics of environmental crimes in the field of subsurface resources protection show wave-like changes in the numbers of registered crimes against the background of their steady overall upward trend (Fig. 1).

Within the analyzed period, we can tentatively single out a three-year period (2002–2005) of a rapid increase in the said crime rate from the minimum initial rate of 55 crimes to 414 crimes in 2005. To evaluate this increase in terms of numbers, let us calculate the average rate of increase in environmental crimes in the field of subsurface resources in the first period which shows how many times each rate (for a given year) exceeds (or is less than) the prior rate. Given that the average rate of increase is calculated for a series of dynamics with the same intervals, the said dynamics indicator is calculated using the geometric mean formula and is 1.96. It is reasonable to use the average rate of increase to determine the average crime growth rate in the first period of the research which demonstrates by what percent on average this rate goes up (or down) as compared to the prior one. Accordingly, in 2002–2005, the average growth rate of these crimes was 96 %.

The second period (2006–2009) is characterized by a relative stabilization of absolute indicators of the crimes under study with insignificant annual fluctuations as compared to the average indicator at the level of 415 crimes.

In 2010, there was a significant increase to 607 crimes, which may be explained by considerable changes in the wording of Article 240 of the Criminal Code of Ukraine in accordance with the Law of Ukraine “On Amendments to Some Legislative Acts of Ukraine on Liability for Environmental Offenses” dated November 05, 2009 No. 1708-VI [11]. Subsequently, in 2011–2012, the rate of the crimes under research significantly declined to 499 and 301 crimes, respectively.

The next period is characterized by more than a two-fold increase in the recorded crime rate, which can be explained by changes in the crime registration procedure introduced by the Criminal Procedure Code of Ukraine in effect since November 20, 2012 [12]. Significant changes in the procedural laws, certain organizational measures, namely, introduction of the Unified Register of Pretrial Investigations (the electronic system for registration of criminal offenses) [13] had a tangible positive impact on the crime registration discipline and resulted in an increase in the recorded crime rates almost in all categories. Thus, starting from 2013 and to 2016, the overall crime dynamics in Ukraine showed a significant increase, which may largely be explained by the fact that its latent component decreased and therefore, a significant number of crimes were moved to light from the shadow. In 2013–2016,

Table 1

Indicators of the dynamics of environmental crimes in the field of subsurface resources protection

Years	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Crimes recorded	55	158	234	414	414	367	428	451	607	499
Increase (decline) rate as compared to 2002, %	100	287	425	753	753	667	778	820	1104	907
Increase (decline) rate as compared to prior year, %	100	287	148	177	100	89	117	105	135	82
Years	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Crimes recorded	301	637	620	623	608	384	358	588	592	780
Increase (decline) rate as compared to 2002, %	547	1158	1127	1133	1105	698	651	1069	1076	1418
Increase (decline) rate as compared to prior year, %	60	212	97	100	98	63	93	164	101	132

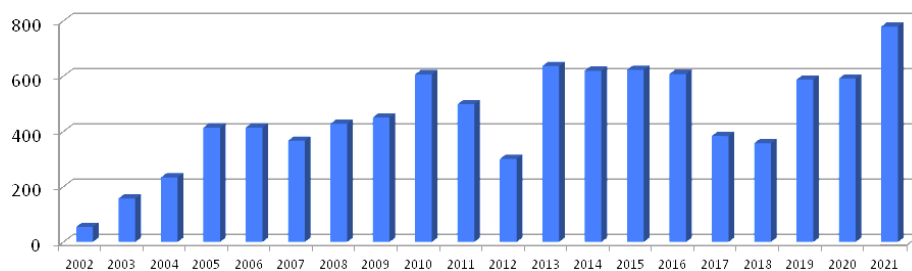


Fig. 1. Dynamics of environmental crimes in the field of subsurface resources protection during 2002–2021 in Ukraine

the rate of environmental crimes in the field of subsurface resources protection was stable with an average rate of 622 crimes.

Over the next two years, we observe an intensive decline in the recorded crime rate to 358 crimes in 2018, and from 2019 till the end of the studied period – a steady increase to the maximum of 780 crimes in 2021. Applying the methodology used for the first period (2002–2005), we calculate the average rate of increase and the average growth rate of environmental crimes in the field of subsurface resources protection during the entire period under research. Accordingly, the said indicators for the period 2002–2021 are 1.15 and 15 %.

One of the quantitative indicators characterizing the prevalence of crimes of a certain category is their share (or proportion) in the structure of all recorded crimes. Regarding the studied category, we would like to note that while in the environmental crime structure the share of crimes in the field of subsurface resources protection is about 18.6 % [3], in the overall crime structure the average share during 2002–2021 is 0.1 %. Based on the relevant calculations, we may affirm that the said indicator has a steady upward trend (Fig. 2).

Comparing the above charts, we can observe that the general trends pertaining to the rate and the share of environmental crimes in the field of subsurface resources protection in the overall crime structure are largely the same. Over 20 years, the relative indicators of the said crimes (share) grew almost 20 times: from 0.01 % in 2002 to 0.24 % in 2021. The growth of the said indicator was particularly pronounced during the past three years when the rate of environmental crimes in the field of subsurface resources protection went up against the background of a significant decline in the absolute indicators of overall crime.

The structure of crime is one of the basic components of criminological characterization of crime. Unlike the above-mentioned indicators of the rate and dynamics characterizing environmental crimes in the field of subsurface resources protection in terms of quantity, structure is a qualitative indicator describing the essence of the mentioned type of crime and its internal arrangement, i.e. the relationship between constituent elements making up crimes in the field of subsurface resources protection as a phenomenon. While the quantitative characteristic of crime has a numeric expression, in particular, as the number of all committed crimes, its qualitative characteristic can be expressed by exploring internal and external connections, as well as relationships which reflect the essential properties of a single crime. Furthermore, while quantitative

indicators are characterized by a rather significant variability, by changes which are contingent on many factors, particularly, on the perfection of the crime-recording system, on the level of public trust in law enforcement agencies, qualitative indicators illustrate the characteristic properties and parameters of crime more accurately. Therefore, quality-based determinacy of environmental crimes in the field of subsurface resources protection as a social phenomenon is ensured through manifestation of its essence, regular order of its arrangement, interaction and relationship of its separate structural elements. Distribution of the entirety of recorded facts of the committed crimes under consideration into separate types and their quantitative relationships with the whole constitute its structure. In terms of the statistical analysis used by us to make a criminological analysis of this type of crime, its structure is the internal arrangement of the entirety of its primary elements (crimes) which, due to the development regularities present in the studied type of crime as a social phenomenon, demonstrate certain trends or inclinations to some or other centers of grouping subject to which the properties of a statistical population (crimes in the field of subsurface resources protection) as a whole phenomenon are preserved [3].

As noted above, in terms of regulation under criminal law environmental crimes in the field of subsurface resources protection are covered by the acts defined in Articles 240, 240¹ of the Criminal Code of Ukraine [1]. Structural distribution can be studied only based on the statistical data of the past two years because illegal mining, sale, acquisition, transfer, sending, transportation, and processing of amber has been criminalized only in late 2019. In the structure of environmental crimes in the field of subsurface resources protection, these crimes account for 23.5 % on average. The share of these crimes was 26.9 % in 2020, and 20.9 % in 2021. Accordingly, the share of crimes related to violation of the rules for subsurface resources protection or use, illegal extraction of mineral resources was 73.1 % in 2020 and 79.1 % in 2021.

It is noteworthy that prior to entry into force of Article 240¹ of the Criminal Code of Ukraine, illegal extraction of amber was treated under Article 240 of the Criminal Code of Ukraine and its share in the structure of environmental crimes in the field of subsurface resources protection, according to various estimates, was very significant, with its rate fluctuating around 30–45 %.

In terms of the prevalence rate of illegal mining, hard coal ranks second (21.5 %). Further in the ranking: underground fresh water – 14 %, sand-gravel mixture – 9.3 %, molding

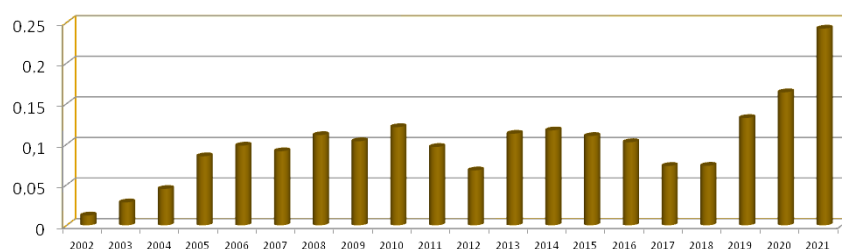


Fig. 2. Share of environmental crimes in the field of subsurface resources protection in the overall crime structure during 2002–2021 in Ukraine, %

sand – 4.7 %, tuff (most often liparite tuff) – 1.9 %, sandstone – 1.8 %. The aggregate category “Miscellaneous”, which includes mineral waters, clay-stone mixture, granite, iron and quartzite-magnetite ores, etc., reaches 0.6 % [9].

Obviously, the mentioned distribution by the target of offence is not stable and unchangeable and does not fully reflect the real situation. Essentially, the quantitative and qualitative indicators of recorded crimes in this category are affected, particularly, by factors stemming from the fact that since 2014 statistical indicators have not covered cases of environmental crimes in the field of subsurface resources protection in the Crimea and in certain districts of Donetsk and Luhansk regions, which is explained by a reduction of the territory under the actual jurisdiction of Ukrainian law enforcement agencies and, accordingly, by curtailed statistical recording of crime.

As mentioned above, indicators characterizing the situation with the crimes under research were calculated based on the official statistical reporting. At the same time, where the issues relating to criminological characterization of environmental crimes in the field of subsurface resources protection are under consideration, there is an urgent need to assess whether the statistical data generated directly by law enforcement agencies are adequate as compared with the real-life prevalence rate of crimes of this category. After analyzing the relevant research publications and based on the authors' empirical studies, the authors give a negative answer to this question. The reason for this is a significant number of the crimes under research which remained latent. To evaluate the latency rate in quantitative terms, 235 employees of Ukrainian local prosecutor's offices (chiefs and their first deputies) representing all regions of Ukraine were interviewed by the expert evaluation method using the questionnaire developed for this purpose. Particularly, to evaluate the latency rate of certain categories of environmental crimes, expert respondents were asked to indicate how many of 100 actually committed environmental crimes of a certain type are registered by law enforcement agencies. Following compilation and further statistical processing of the responses received based on the said questionnaire, the latency rate of environmental crimes in the field of subsurface resources protection was estimated as 72.7 % [3].

Conclusions and further development prospects in this area.

Based on the analysis of the situation with environmental crimes in the field of subsurface resources protection made by the authors, the absolute, average and relative indicators have been found, namely, the rate, dynamics and structure of crimes of this category in Ukraine: in 2002–2021, 9,118 environmental crimes in the field of subsurface resources protection were recorded, with an average of 456 crimes each year; the share of the crimes under research in the overall crime structure over the past 20 years is steadily insignificant, and its considerable growth (from 0.01 to 0.24 %) results from the fact that the increase in the rate of environmental crimes in the field of subsurface resources protection is significantly higher than the growth of absolute indicators of overall crime; the average value of this indicator is 0.1 %; the calculated average growth rate of the crimes under research is 1.96. Given that the analyzed period is a series of dynamics with the same intervals, the said indicator is calculated using the geometric mean formula. Accordingly, the average rate of increase in environmental crimes is 96 % and it shows by how many percent this rate grows on average as compared to the prior one; the analysis of dynamics indicators of environmental crimes in the field of subsurface resources protection shows wave-like changes in the number of registered crimes against the background of their steady overall upward trend – over the twenty-year period analyzed, the array of recorded crimes of this category grew more than 14 times. Summarizing the material considered in this article, we should note that criminological characterization of environmental crimes in the field of subsurface resources protection is the basis for development and implementation of measures to prevent crimes of this category, as well as

for appropriate legislative, law enforcement, organizational and other measures to counter the mentioned crimes.

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Кримінологічна характеристика екологічних злочинів у сфері охорони надр

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Мета. Дослідження стану екологічних злочинів у сфері охорони надр, надання їх кримінологічної характе-

ристики, а саме розрахунок відповідних кримінологічних показників, що відображають рівень, динаміку та структуру досліджуваного виду злочинності.

Методика. Система загальнонаукових і спеціальних методів й підходів, що забезпечили об'єктивний аналіз досліджуваного предмета, зокрема, логіко-догматичний, системний, документальний методи, а також методи моделювання та статистичного аналізу.

Результати. З'ясовані абсолютні, середні й відносні показники екологічних злочинів у сфері охорони надр в Україні протягом 2002–2021 рр. Розрахована загальна кількість облікованих злочинів досліджуваної категорії (9118 злочини) та їх середньорічне значення (456 злочинів), питома вага в загальній структурі злочинності за останні 20 років (0,1 %). Зроблено висновок щодо значного зростання частки екологічних злочинів у сфері охорони надр у структурі загальної злочинності (від 0,01 до 0,24 %), яке зумовлене тим, що збільшення рівня значених злочинів суттєво випереджає зростання абсолютних показників загальної злочинності. Розраховані показники динаміки засвідчили хвилеподібні зміни в кількості зареєстрованих злочинів на тлі стійкої загальної тенденції до їх зростання – за двадцятирічний період аналізу масив облікованих злочинів даної категорії зріс більш ніж у 14 разів.

Наукова новизна. На основі довгострокового статистичного аналізу (2002–2021 рр.) у роботі вперше з часу криміналізації незаконного видобутку бурштину надана кримінологічна характеристика екологічних злочинів у сфері охорони надр.

Практична значимість. Обґрунтоване авторське розуміння сутності даної категорії злочинів, що передбачені ст. 240 КК України «Порушення правил охорони або використання надр, незаконне видобування корисних копалин» та ст. 240¹ КК України «Незаконне видобування, збут, придбання, передача, пересилання, перевезення, переробка бурштину». Розраховані показники, що відображають рівень, динаміку та структуру злочинів зазначеної категорії, що має самостійне значення як для наукової, так і правозастосовної діяльності, створює відповідну базу для інформаційного забезпечення протидії екологічним злочинам у сфері охорони надр і є необхідною передумовою розробки відповідної системи кримінально-превентивних специфікованих заходів.

Ключові слова: злочини у сфері охорони надр, надрокористування, показники злочинності, рівень, динаміка, структура

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