Legislative Changes Related to Cannabis and Industrial Property Rights on Deforestation and Investments

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ABSTRACT: *This paper analyzes how deforestation and investments are influenced by the legalization of cannabis products for medical/industrial and recreational purposes, as well as their possible protection with Designation of Origin, and Geographical Indication. The long history of illegal cannabis-related activity and the consequences of such activity in the economy, society, and ecosystem during the last decades, the considerations of this paper are of high interest for new business opportunities, expanding or changing existing business objectives, and revitalizing affected forests. A questionnaire via electronic means was spread to gather the data while the logit model and its marginal effect were applied to obtain the results and analyze this influence. Investments in the field of cannabis for medical/industrial and/or recreational purposes appear to be more sensitive to this change, whether the preservation of the ecosystem seems not to be positively influenced. The actual legislative change and a potential future one do show significance, contrary to the industrial property rights, showing the need for further awareness of the benefits of these instruments for the economy. The findings interest economists, pharma and other relevant business fields, policymakers, and scientists in Albania, the region, and worldwide.*

Keywords: Legalization, IP, forests, pharma, business, sustainability.

INTRODUCTION

The purpose of this study is to find out how the investment in cannabis legal business and seeking financing for this purpose, as well as how the ecosystem of forests in a

country with a long history of illegal cannabis activity will be influenced by the legalization of medical/industrial and recreational cannabis or using industrial property (IP) rights in this field. This will be achieved by finding out primarily how employees or the public or private institutions where they work are interested in medical/industrial cannabis activity after the recent legalization of cannabis for the latter and in a possible engagement in a legal activity for recreational cannabis if it would be legalized in the future. The second objective would also be to investigate their prior knowledge and use of industrial property rights in their activity and whether they would be interested in using them to protect the cannabis products in the actual legalization case and the future one as mentioned above. The studied industrial property rights, in this case, are Geographical Indication and Designation of Origin (also known as Appellation of Origin), as two industrial property rights that are the most connected to the nature of these products as part of the pharmaceutical and agricultural industry (Dega, 2019; UNODC, 2023).

The main research questions therefore are the following:
- What is the effect of the legalization of cannabis for **medical and industrial** purposes on opening a business and seeking finance in this sector? What is its effect on deforestation?
- What is the effect of the legalization of cannabis for **recreational** purposes on opening a business and seeking finance in this sector? What is its effect on deforestation?
- What is the effect of registering these cannabis products with Geographical Indication or Designation of Origin on opening a business and seeking finance in this sector? What is its effect on deforestation?

The business sector has faced many changes during the recent decades throughout the world in general, and Albania has not been left untouched by these changes. Two important sectors in which this country has faced difficulties are the agricultural and pharmaceutical sectors, which are very susceptible to climatic changes, innovation, and legislative aspects, such as subventions and licenses regarding specific products. This paper studies the legislative aspects of cannabis legalization, meaning medical, industrial, and recreational, regarding the legalization and the possibility of registering them with Geographical Indication and Designation of Origin. It focuses on the related possibilities that companies can have regarding business opportunities in these sectors by making cannabis products part of their business activities. Another aspect included in this study is the environmental impact of such legislative actions, such as their impact on forests and pastureland. This study touches on aspects of the importance of taking advantage of traditional cultivation techniques by using Geographical Indications and Designation of Origins, as well as the important role cannabis could play in

sustainability (Bewley-Taylor, et al. 2020; UN General Assembly, 2016; Benavente, 2013).

By gathering data through a questionnaire distributed via different electronic means, significant results regarding the impact of such legislative changes were analyzed using the proper econometric methods in the case of such qualitative data. The paper reveals how Albanian society reacts to a possible change in the legislation regarding cannabis products and their impact on illegal deforestation, on doing business in this sector, as well as the reaction to industrial property rights, and if these changes and rights are the right ways to foster new business opportunities and to protect our nature. The hypotheses of the study are the following:

Hypothesis 1: *Legalization of cannabis for medical/ industrial purposes and/or recreative purposes, and the possibility of protecting them with Designation of Origin / Geographical Indication will reduce illegal deforestation.*

Hypothesis 2: *Legalization of cannabis for medical/ industrial purposes and/or recreational purposes, and the possibility of protecting them with Designation of Origin / Geographical Indication will increase the willingness to invest in this sector.*
To answer research questions or check the validity of the hypotheses we have applied the nonlinear logit model and its marginal effect. The contribution of the study is twofold: first, to the best of my knowledge, this is one of the first studies that work on this topic in Albania and Southeast European countries. Second, few studies have used a qualitative approach, and none of them have applied sophisticated methodology to find out about the legalization of cannabis, its registration with industrial property rights, its consequences on opening a legal cannabis business, and the ecosystem.

The study continues with a wide literature review, including aspects of legislative requirements, media, international organization reports, and scientific studies from all over the world to tackle all the necessary aspects related to this complex field. Then the methodology is explained, followed by the analysis of the results, by giving conclusions at the end.

LITERATURE REVIEW

Through the years there has been prolonged deliberation about the potential implementation of a state monopoly for cannabis cultivation in Albania and there were proposed scenarios like establishing transparent contracts with farmers or private enterprises, employing a clear system for monitoring planted areas and adhering to legal procedures to ensure rigorous control over this activity, as suggested by Civici (2020). But lately, there was adopted Law No. 61/2023 "For the Control of the

Cultivation and Processing of the Cannabis Plant and Production of its By-Products for Medicinal and Industrial Purposes" (hereinafter called "Cannabis Law"). The object of this law is the definition of rules for the controlled cultivation, production, and circulation of the cannabis plant, its by-products, and final products for medical and industrial use. The "war" against illegal marijuana-related activity has continued during the last years by the Albanian government and even lately after the Cannabis Law was passed (Ministry of Internal Affairs, 2023). This law opens the way to the development of a new business sector and investment in the pharma and industry sectors. The investment climate is strongly connected to informality, the anti-corruption war, and money laundering which is also a result of cannabis-related crimes (Lamce, 2022). Some activities related to cannabis which were illegal previously, and now are legal, in theory, could impact positively the investment climate and the willingness to invest in such a business. Nevertheless, experts in different fields such as economics, agriculture, etc. are concerned that these legal changes will not stop illegal activity though, as in the case of North Macedonia (A.B., 2023). The Cannabis Law provides for the possibility to open a medical cannabis business only in specific cases. It requires three years of experience in this field, the subject or one of its shareholders must own 51 % of the shares and operate this activity in one of the OECD countries, have a social capital of not less than 100 000 000 ALL, etc. This makes opportunities for an Albanian farmer or businesses practically impossible to invest in such a business unless in the years to come, they meanwhile open such a business in an OECD country and gather the necessary experience. Therefore, the only opportunity for the actual farmers and businesses to engage in such an activity for the moment would be to sell the arable land to these companies and leave the farms to join these lucrative businesses as workers or specialists, even by undeclared work, as in the illegal cannabis business until now (A.B., 2023). It could also ease the illegal trafficking of cannabis pretending to be for medical use (Sabaghi, 2022). On the other side, the Cannabis Law provides for a mechanism of control, such as the Agency in charge of licensing, and approving this activity, which could be an indicator of inhibiting illegal cannabis activity, even though not a guarantee for it, as seen in other countries with such an experience.

On the other side, the Cannabis Law also provides the possibility of opening a business for the cultivation and production of cannabis for industrial purposes, which has fewer hurdles to entry in comparison to medical cannabis. This might be very interesting for the farmers or businesses interested in investing in such an activity because Albania has ca. 30 years of experience in creating a workforce with extensive knowledge in this field (Hoxha, 2022). Parallel to this might be the risk of replacing the primary agricultural products with cannabis for industrial purposes (Lamce et al., 2023), which could diminish this positive effect on the economy.

Additionally, there is interest in exploring the option of registering Albanian cannabis products with Geographical Indication (GI) or Designation of Origin (DO) to incorporate them into industrial property protection laws. The Albanian legislation rules them under Law No. 9947, dated 07.07.2008 "For Industrial Property", as amended (hereinafter called IP Law). According to this Law, an Albanian Designation of Origin is the name that identifies a product that originates from a specific country, region, or in special cases, a country, whose qualities or characteristics come, exclusively or essentially, as a result of a particular geographical environment, which includes natural and human factors, inherited from this environment, and the steps for the production of which are carried out in the defined geographical area. An Albanian Geographical Indication is a name that identifies a product that originates in a specific country, region, or country, whose qualities, reputation, or other characteristics are essentially attributed to its geographical origin, and at least one of its production steps is carried out in the defined geographical area. Agricultural products are the most typical products that fall under the Designation of Origin because their characteristics are strongly connected to and influenced by the land where they are produced (Dega, 2019).

While the World Trade Organization Agreement (TRIPS) currently limits Geographical Indication protection to wines and spirits, some countries, like Jamaica, have already extended such protection to cannabis within their domestic jurisdictions, as noted by Cadogan (2015). In 2015 the Government of Jamaica changed the drug legislation by allowing the industry for medical cannabis and hemp to get licensed (Davenport & Pardo, 2015). The Jamaica Intellectual Property Office (JIPO) is competent to register different eligible products with Patents, Trademarks, and Geographical Indication (GI), including products related to cannabis, such as strains, breeding, etc., despite the lack of previous experience with these kinds of products and the lack of power to enforce this protection worldwide (Davenport & Pardo, 2015). JIPO has received many applications for ganja products (an old term referring to Cannabis) for medical purposes, mostly patents and trademarks, and expects the registrations of these products with Geographical Indication (GI), as they have a remarkable potential to be registered with this right, especially bearing in mind the long Jamaican tradition of this medicinal herb (Jackson, 2015). Another similar example is the one of California in the United States, where from January 2022 are created appellations of origin in the case of cannabis products (United Nations, 2022).

Appellations of Origin can promote different hemp types, especially in developing countries, and help in the transition phase from illicit drug crops to licit production (Alimi, 2018; Brombacher and David, 2020; Jelsma et al., 2021), as well as enhance sustainability in rural and environmental issues (United Nations, 2022). The Geneva

Act of WIPO`s Lisbon Agreement on Appellations of Origin and Geographical Indications (The Geneva Act) (adopted in 2015 and entered into force in 2020) is a development that brought some new possibilities regarding IP protection, and it allows intergovernmental organizations to join it (WIPO, n.d.), but none of the countries of the United States of America has adhered to it. Nevertheless, these countries are very much ahead regarding the legislation about cannabis products, even in terms of Industrial Property protection. In some countries of the US Appellations of Origin are used for the cannabis plant for medical purposes (Stoa, 2017). Such considerations are important in the cases that the local legislation requires for the plant to be grown inside the state's territory like in the case of New Mexico to protect the inside market from outside cannabis products (Stoa, 2017). In Albania, according to the IP Law medications can be protected with a Patent and a Certificate for Additional Protection for Medical Products and Products for Plants Protection. Not having a long-consolidated history of registered Appellations of Origin and Geographical Indications, only recently having passed the Cannabis Law, and having no licensed companies yet, cannot be mentioned any example of such protection of medical cannabis or industrial hemp until now (not to mention the recreational one), or if any of these products will ever be registered with these instruments. But Albania deposited accession to the Geneva Act on June 26[th,] 2019 (WIPO, 2019), and the Lisbon Agreement itself entered into force on May 8th, 2019 for Albania (Origin, n.d.), representing a good background for this new legislative change in this country and the perspectives of alternative ways of protecting and increasing the value of these products. From an economic perspective, Albania could benefit significantly, as Geographical Indications and Designation of Origins have the potential to enhance the product's brand value and indirectly boost state revenue (Grijalva, et al. 2020). Despite expert concerns, there is evidence regarding the potential of registering these products therewith and the social and economic impact that this could have on Albania. Nevertheless, this hypothesis necessitates genuine empirical research to validate its applicability in the case of Albania.

There are many studies suggesting that cannabis cultivation can result in deforestation and forest fragmentation which worsen soil erosion (Wang et al. 2017). Unfortunately, the war on drugs and cannabis policy has also negatively affected forests and the ecosystem, which is seen in the correlation between the time drugs were transited and the noticed loss in forests (McSweeney et al., 2014). The illegal acquisition and conversion of forests in protected areas and indigenous territories has faced widespread, by being facilitated by traffickers who use political influence for impunity and sometimes forge land titles (McSweeney & Pearson, 2014). For this reason, there has been a permanent transformation of forests into agricultural land because the acquired areas are sold to criminal organizations, which on the other

side may sell later to legitimate corporate interests investing in Central American agribusiness (Grandia, 2013; Cuellar, et al., 2011; McSweeney et al., 2014). Eradication policies which often compel coca (as well as opium poppy and marijuana) growers to move into increasingly ecologically sensitive areas, causing significant environmental repercussions, are very widespread among drug crop cultivators, especially in the Andes (Briones et al., 2013; Bradley, & Millington, 2008). Yet, there has not been seen any increased attention to how this "balloon effect" extends up the drug commodity chain, because prohibition programs force traffickers into remote spaces. They intensify existing pressures on forests there, discover new opportunities for money laundering, and engage in illegal enrichment by conversing forests in the places through which drugs are transported (Stone, 2012).

Even though greenhouses do normally prevent soil erosion, they are surrounded by large clearings that are accumulated during construction, which expose soils to erosion (Bauer et al. 2015).

The impact on investments in this field is also of importance, considering the lucrative earnings from this market worldwide, as BDSA forecasts for the global legal sales market of cannabis to reach $ 55 milliards in 2027 (Dorbian, 2023). To date, there is not sufficient information available about the strategies and operations of international investors in the growing legal cannabis markets. In the Global South, including Africa, South-East Asia, and Latin America there is being invested as a result of potential advantages from better climate conditions and lower labor costs (Rychert et al., 2021). The study of Rychert et al. goes on to describe the situation also in other countries such as in different developing countries, including Malawi, one of the world's poorest countries, which has recently reformed its drug laws to establish legal medicinal cannabis regimes, to attract international investment and to stimulate economic growth. Even though there have been concerns about "colonial" influences and warnings against the dominance of large corporations in the cannabis market in Africa and South America, foreign investments in these emerging markets can lead to essential capital for research and infrastructure development, especially in the medicinal cannabis sector, where compliance with the international standards for trade is essential for cannabis production that is destined for export. (McCool, 2020). Regarding Albania, as mentioned above, the new Law on Cannabis rules the possibility of opening a medical cannabis business only under some very strict and high standards criteria, which according to some experts makes it nearly impossible for Albanian businesses to meet them (Delia-Kaci, 2023). Cannabis for industrial purposes on the other side, could be a very interesting field to invest in locally because it does not have such a high burden of entry. (Vizion Plus, 2023). To the best of my knowledge, there is scarce literature on the influence of cannabis legalization on deforestation and business opening or

financial issues in that field, even less on the influence of cannabis registration with Geographical indication or Designation of Origin on the same aspects, not to mention in the Albanian scientific scenery, where cannabis legalization is very recent and the aforementioned industrial property rights are not very wide used even for other products. This research paper studies the state of the research worldwide in countries with experience in this field and combines the variables differently and holistically, focusing on the potential that the cannabis industry could give to a transition country like Albania and the ways it can be exploited to create profit and sustainability.

DATA AND RESEARCH METHODOLOGY

The primary data used in this study were gathered by means of a questionnaire spread to different parts of the population, mainly people who worked in private businesses. They were asked about their own opinion and the trends of the businesses where they worked about cannabis legalization, a possible business expansion or opening in the cannabis industry, the use of industrial property in these businesses with a focus on this industry, as well as considerations regarding the impact thereof in the ecosystem. They were also asked to spread the questionnaire to other people they knew (Lamce et al., 2023) who worked preferably in private businesses, to expand the possibility of getting the desired information from the business field, as the suited contingent targeted by the Cannabis Law. The latter helped avoid the limitation of the study about ensuring direct contact with possible businesses or farmers who would possibly be interested in the field, especially bearing in mind the sensitivity of a field that was considered illegal until the middle of 2023 in Albania. The hypotheses must be based on the perception and willingness of the public to open a business and invest in this sector according to the new legislation in Albania to better surpass the problem of the lack of data and the lack of experience of the respondents with the Cannabis Law. For this reason, the questionnaire was piloted by a group of University Professors, to make the questions ready for the survey.

Other limitations of the study are related to the lack of scientific studies in Albania regarding this field and the lack of experience with this product in the market, which makes it hard to find possible solutions to the issues related to the field representing the Albanian reality. This, together with the lack of data, makes it even harder for precise predictions. For this reason at least for the industrial property rights, several questions in the questionnaire were used to investigate the relevant aforementioned influence, such as the prior knowledge of Geographical Indication and Designation of Origin, the prior experience with them for other kinds of products (*not for cannabis because it has been illegal until mid-2023 for medical purposes and it is still illegal for recreational purposes in Albania*) and the intention to use it now after the legislative changes or in case of further expansion of cannabis legislation. The responses were

then coded after aggregating them for a better result. The same has been done with the question about the legalization for medical purposes and the one about the legalization for industrial purposes, as they are both part of the same law now in Albania.

This paper uses qualitative variables in the form of dichotomous variables by using yes or no questions and by coding "yes" related to the presence of the predicted situation of the hypothesis with 1 and 0 otherwise (Martin, 2022).

The specification of the logit model is following:

- *(dependant variable = 1) = G(β_0 + Zit)*
- *The dependent variables are binary 0 or 1 variables weather "Open business and seek for finance" or "Decrease illegal deforestation" or not.*
  Zit contains the independent variables (binary as well) "Legalization of Cannabis for medical/industrial purposes", "Legalization of cannabis for recreational purposes" or "Registration of cannabis products with Industrial Property rights such as GI or DO"

RESULTS AND ANALYSIS

It was possible to collect answers from 216 respondents, making 216 observations enough for the analysis in the two following tables (1 - 4). The P-value lower than 0.005 (Table 1) is shown only for the independent variables "Legalization for Medical and for Recreational Purposes". The independent variables are significant for the first hypothesis, rejecting the null hypothesis for the first half of the first hypothesis. Not the same can be said about the independent variable "Registering Cannabis Products with Industrial Property Rights", the p-value of which does not show any significance. This analysis provides information on the statistical significance and direction of the relationships between the independent variables and the dependent variable in the logistic regression model:

For each one-unit increase in IP protection, the log odds of the dependent variable decrease by approximately 0.146 (though this change is not statistically significant given the high p-value of 0.716). For each one-unit increase in the importance of Recreational Cannabis legalization, the log odds of the dependent variable increase by approximately 1.548, and this change is statistically significant with a p-value of 0.010. For each one-unit increase in the importance of Medical/Industrial Cannabis legalization, the log odds of the dependent variable increase by approximately 0.855, and this change is statistically significant with a p-value of 0.016.

The intercept term (_cons) is the log odds of the dependent variable when all independent variables are zero. The significance levels are denoted by asterisks: * for p-values less than 0.05, ** for p-values less than 0.01, and *** for p-values less than 0.001.

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DepVOpenBusinSeekFinanc	Coeff.	Std. err.	z	P>|z|	[95% Conf. Interval]
IndVRegIndustrProperty	-.1460619	.4021885	-0.36	0.716	-.9343368 .642213
IndVProLegalCannRecreatPurp	1.548396	.599597	2.58	0.010**	.3732075 2.723584
IndVProLegalCannMedPurp	.854532	.3550495	2.41	0.016*	.1586478 1.550416
_cons	-.9162907	.209165	-4.38	0.000***	-1.326247 -.5063348

Table 1 Logit Model 1
Source: Authors Calculation

In Table 2 below is shown a low standard error and again a P-Value lower than 0.05, which makes the predictors "Legalization of recreational and medical/industrial cannabis" significant ones. It shows also that the legalization for recreational purposes and medical/industrial purposes is likely to increase the investment and opening of businesses in this field by ca. 26.3 % and 17.6 % respectively. Also, here is the other independent variable insignificant to this hypothesis. In summary, the table provides information on the magnitude, precision, and significance of the marginal effects for each variable in the model.

variable	dy/dx	Std.err.	Z	P>|z|	[95% Conf. Interval]	x
IndVRegIndustrProperty	-.0303353	.08354	-0.36	0.717	-.194072 .133401	1.88889
IndVProLegalCannRecreatPurp	.2630819	.07366	3.57	0.000***	.118711 .407453	.240741
IndVProLegalCannMedPurp	.1761446	.0723	2.44	0.015*	.03444 .317849	.5

Table 2 Marginal effects 1
Source: Authors Calculation

Table 3 below shows the Logit Model for the second Hypothesis. The P-value (0.01 and 0.001) shows again a relevance only for the independent variables "Legalization of recreational and medical/industrial cannabis", not for the independent variable "Registration of cannabis products with IP rights such as GI or DO" (0.577). For each one-unit increase in IP Protection, the log odds of Deforestation increase by 0.3191. However, this change is not statistically significant given the high p-value of 0.577. For each one-unit increase in the importance of Recreational Cannabis legalization, the log odds of Deforestation increase by 1.3591, and this change is

statistically significant with a p-value of 0.001. For each one-unit increase in the importance of Medical/Industrial Cannabis legalization, the log odds of Deforestation increase by 1.596, and this change is statistically significant with a p-value of 0.001.

The intercept term (_cons) of -3.738 is the log odds of the Dependent Variable Deforestation when all independent variables are zero.

DepVDecreaseIllegalDeforest	Coeff.	Std. err.	z	P>|z|	[95% Conf. Interval]
IndVRegIndustrProperty	.3191182	.572701	0.56	0.577	-.8033553 1.441592
IndVProLegalCannRecreatPurp	1.359086	.4131904	3.29	0.001	.5492473 2.168924
IndVProLegalCannMedPurp	1.59599	.473775	3.37	0.001	.6674079 2.524572
_cons	-3.73812	1.318444	-2.84	0.005	-6.322223 -1.154017

Table 3 Logit Model 2
Source: Authors Calculation

In Table 4 is shown a low standard error and again a P-Value lower than 0.05 for the predictors "Legalization of Recreational and Medical/Industrial Cannabis" making them again here significant. Also, here is the other independent variable insignificant to this hypothesis. However, it shows that the legalization for recreational purposes and medical purposes is likely to increase deforestation by ca. 25.7 % and 25.3 % respectively, but the hypothesis was that the legalization of both kinds of products would decrease deforestation because of cannabis-related activity, not increase it.

DepVDecreaseIllegalDeforest	dy/dx	Std.err.	Z	P>|z|	[95% Conf. Interval]	x
IndVRegIndustrProperty	.0505037	.09041	0.56	0.576	-.126695 .227702	1.88889
IndVProLegalCannRecreatPurp	.2575487	.09096	2.83	0.005	.07928 .435817	.240741
IndVProLegalCannMedPurp	.25334	.06762	3.75	0.000	.120809 .385871	.5

Table 4 Marginal effects 2
Source: Authors calculation

DISCUSSIONS AND CONCLUSIONS

The results of the study show that only the legislation changes towards cannabis production and sales for medical/industrial and/or recreational purposes have relevance for the study, but they influence positively only the investments in this field, not the decrease of deforestation. It is still very soon to see an influence in the environmental direction, which is a long-run vision contrary to short-term profits. Nevertheless, the strong criteria to be licensed for a medical cannabis business lead the door open to foreign businesses, and simultaneously make it very difficult for interested locals to have a chance to become licensed, unless they continue or begin their activity in this field illegally. Another difficulty faced by farmers and investors in the field is the fact that industrial hemp has often been confused with marijuana, and this has led to their unjust prosecution. On the other side, there is the risk that farmers could benefit from the similarity of industrial hemp with marijuana. This would make the control and execution of the respective legislation more difficult for the state police (Exit News, 2016). All these issues have diminished the interest of new entries to invest in this field (abroad until the middle of 2023) by not being able to specialize legally in the cannabis business, be it for medical or industrial purposes. The results and analysis show no statistical relevance for the study of the registration of medical/industrial or recreational cannabis with Designation of Origin or Geographical Indication. In Albania, there is a lack of proper knowledge and the modest usage of these rights in the business community (Maho, 2023). This may be the reason for such a result, even though the number of such registrations is very slow, it is increasing, which could be a sign for a better perspective of its influence in the future for cannabis business opening and decrease of deforestation.

The mistrust of legalization regarding the decrease of deforestation may come also because of the nature of the business, which involves new land usage, and the lack of information that people and businesses still have on the maximum number of hectares allowed in the whole territory for this purpose. Moreover, the risk of informality can be another reason for that, because of the difficulties in meeting the licensing criteria. Being only for outland export and consumption, it is also exposed to entry quotas and the legislative situation of other countries. Another concern is the high concentration level of THC allowed for industrial cannabis (0,8%) in Albania, while e.g. in Europe this concentration is not allowed to be higher than 0.3 % for true hemp (European Commission, n.d.). According to the new Common Agricultural Policy, this level has been introduced on 1 January 2023. This is not only a legislative barrier to Hemp companies operating in Albania under the new Cannabis Law, but also an economic one, as this increase in the concentration level increases also the eligibility of farmers operating in the EU for EU subsidies as this makes them able to grow and sell more hemp varieties for industrial purposes (Sivasubramaniam, 2021).

The transition of the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) into the European Union Drugs Agency (EUDA) on 2 July 2024 happened to better control, be

better prepared and competent concerning drug issues and the respective interventions in the EU (EMCDDA, 2023). This increases the sense of responsibility for new companies that want to operate and export cannabis products to the EU.

REFERENCES

A. B. (2023). Rreziqet dhe përfitimet e ligjërimit të kanabisit. (*Risks and benefits of legalizing cannabis*). Retrieved from: https://dosja.al/aktualitet/rreziqet-dhe-fitimet-e-ligjerimit-te-kanabisit-i311757

Alimi, D. (2018). Drogues et développement: vers de nouvelles perspectives? *(Drugs and development: towards new perspectives?). Drogues Enjeux Internationaux,* 11. Retrieved from: https://www.ofdt.fr/index.php?cID=1055 .

Bauer, S., Olson, J., Cockrill, A., van Hattem, M., Miller, L., et al. (2015) Correction: Impacts of Surface Water Diversions for Marijuana Cultivation on Aquatic Habitat in Four Northwestern California Watersheds. *PLOS ONE,* 10(9): e0137935.

Benavente, D. (2013). *The Economics of Geographical Indications.* Geneva: Graduate Institute Publications. New online edition, retrieved from: http://books.openedition.org/iheid/525 DOI : 10.4000/1895.2

Bewley-Taylor, D., Jelsma, M., Kay, S. (2020). Cannabis Regulation and Development: Options for Emerging Legal Markets. *Drug Policies and Development. PART 1 Milestones of Drug Policies and Development,* 12/2020. Retrieved from: https://journals.openedition.org/poldev/3758#tocto1n3.https://doi.org/10.4000/poldev.3408

Bradley, A. V., Millington, A. C. (2008). Coca and Colonists: quantifying and explaining forest clearance under coca and anti-narcotics policy regimes. *Ecology and Soc*iety, 13, 31.

Briones, A. et al. (2013). The Drug Problem in the Americas. Washington, DC: *General Secretariat, OAS.*

Brombacher, D., and David, S. (2020). From alternative development to development-oriented drug policies. *International Development Policy,* 12:64–78. Available at https://library.oapen.org/bitstream/ handle/20.500.12657/42548/9789004440494.pdf?sequence=1#page=87.

Cadogan, M. (2015). Inside Views: The legal implications of Medicinal Marijuana as a Geographical Indication for Jamaica. *Intellectual Property Watch, International IP Policy News.* Retrieved on 1st February 2022 from https://www.ip-watch.org/2015/03/02/the-legal-implications-of-medicinal-marijuana-as-a-geographical-indication-for-jamaica/#:~:text=Jamaica's%20Cannabis%20(hereafter%20marijuana)%2C,which%20is%20domestically%20GI%20registrable.&text=Jamaica%2C%20and%20a%20number%20of,register%20products%20under%20the%20legislation.

Civici, A. (2020). Hashashi/Adrian Civici: Nëse zhvillohet siç duhet përfitimet ekonomike janë të mëdha (*Hashish/Adrian Civici: If developed properly, the economic benefits are huge*). *Fjala.al.* Retrieved on 10th February, 2021 from https://fjala.al/2020/05/14/adrian-civici-nese-zhvillohet-sic-duhet-perfitimet-ekonomike-jane-te-medha/.

Cuéllar, N., Kandel, S., Davis, A., Diaz, O., Luna, F., and Ortiz, X. (2011). Territorial Dynamics in Central America: Context and Challenges for Rural Communities. San Salvador: *Fundación PRISMA*.

Davenport, S., Pardo, B. (2015). A Regulated Cannabis Industry for Jamaica. *TEC Corporation*.

Dega, F. (2019). *Pronësia Intelektuale.* (*Intellectual Property*). Tirana: Morava.

Delia – Kaci, J. (2023). Evropa e Lirë: Kanabisi për qëllime mjekësore hap debat të ashpër në Shqipëri. *Tema.* https://www.gazetatema.net/sociale/evropa-e-lire-kanabisi-per-qellime-mjekesore-hap-debat-te-ashper-ne-shqi-i398468

Dorbian, I. (2023). Global Weed Market Could Soar To $ 55 Billion on Four Years. *Forbes.* Retrieved from: https://www.forbes.com/sites/irisdorbian/2023/10/02/global-legal-weed-market-could-soar-to-55-billion-in-five-years/?sh=652157776630

EMCDDA. (2023). New legislation grants Europe stronger powers to tackle current and future drug problems. *EMCDDA.* Retrieved from: https://www.emcdda.europa.eu/news/2023/6/new-legislation-grants-europe-stronger-powers-tackle-current-and-future-drug-problems_en

European Commission. (n.d.). Agriculture and rural development. Hemp. *European Commission.* Retrieved from: https://agriculture.ec.europa.eu/farming/crop-productions-and-plant-based-products/hemp_en

Exit News. (2016). Kultivimi i kanabisit industrial – Exit Shpjegon. (*Industrial Cannabis cultivation -Exit explains*). *Exit News*. Retrieved on 01.11.2023 from: https://exit.al/lejimi-i-kultivimit-te-kerpit-industrial-exit-shpjegon/

Grandia, L. (2013). Road Mapping: Megaprojects and Land Grabs in the Northern Guatemalan Lowlands. *Development and Change,* 44, 233. https://doi.org/10.1111/dech.12020

Grijalva, J. N., Viera, D. N., Villacis, D. M. (2020). Designations of origin and geographical indications as an element of economic development: The Equador Case. *Revista Facultad de Jurisprudencia RFJ*, No.8 Vol II. pp. 296-318. DOI 10.26807/rfj.v2i8.236. Retrieved from: https://www.revistarfjpuce.edu.ec/index.php/rfj/article/view/236/175

Hoxha, B. (2022). Ekonomia ilegale e kanabisit (The illegal cannabis economy). *Monitor.* Retrieved from: https://www.monitor.al/ekonomia-ilegale-e-kanabisit/

Jackson, S. (2015). Ganja producers seek JIPO protection. *Jamaica Observer*. Retrieved on November 27th, 2023 from https://www.jamaicaobserver.com/business/ganja-producers-seek-jipo-protection/

Jelsma M, Blickman T, Kay S, Metaal P, Martínez N and Putri D (2021). A Sustainable Future for Cannabis Farmers: 'Alternative Development' Opportunities in the Legal Cannabis Market. Amsterdam: Transnational Institute.

Lamçe, N. (2022). Money Laundering, Real Estate Market and Cannabis Related Crimes. *10th International Scientific Conference "Modern Research and Trends in Economics, Law and Social Policies (pp. 443-450).* Elbasan: Faculty of Economy, University of Elbasan "Aleksandër Xhuvani".

Lamçe, N., Fetai, B., Mani, A. (2023). Subsidizing Agricultural Products to Prevent their Replacement in the Case of Cannabis Legalization – The Case of Albania. *International Symposium for*

Environmental Science and Engineering Research (ISESER) (pp. 119-125). Konya, Türkiye: Necmettin Erbakan Üniversitesi Yayınları.

Maho, N. (2023). Emërtimet e origjinës, në 2022 veç një aplikim, djathi mishavina i Bjeshkëve të Kelmendit (Appellations of origin, in 2022 only one application, Mishavina cheese of Kelmendi Mountains). *Monitor.* Retrieved from: https://www.monitor.al/emertimet-e-origjines-ne-2022-vec-nje-aplikim-djathi-mishavina-i-bjeshkeve-te-kelmendit/ .

Martin, P. (2022). *Regression Models for Categorical and Count Data*. London: SAGE Publications Ltd.

McCool, A. (2020). Malawi legalises cannabis amid hopes of fresh economic growth. (28 February 2020). *The Guardian.* Retrieved from https://www. theguardian.com/global-development/2020/feb/28/malawi-legalises-canna bis-amid-hopes-of-fresh-economic-growth

McSweeney, K., Nielsen, E.A., Taylor, M.J., Wrathall, D.J., Pearson, Z., Wand, O. & Plumb, S.T. (2014). Drug Policy as Conservation Policy: Narco-Deforestation. Conservation. *Science,* Vol. 343. 10.1126/science.1244082

McSweeney, K., Pearson, Z. (2014). Prying native people from native lands: Narco business in Honduras. NACLA Report on the Americas.

Ministry of Internal Affairs. (2023). Raporti Statistikor Mujor i Ministrisë së Brendshme. (Statistical Report of the Ministry of Interior). Retrieved from: https://mb.gov.al/raporti-mujor/ .

Origin, (n.d.). 08/02/2019 – Albania joins the Lisbon Agreement while the EU discusses the modalities of its accession to the Geneva Act. *Organization for an International Geographical Indications Network (Origin).* Retrieved from: https://www.origin-gi.com/web_articles/08-02-2019-albania-joins-the-lisbon-agreement-while-the-eu-discusses-the-modalities-of-its-accession-to-the-geneva-act/

Rychert, M., Emanuel, M. A., Wilkins, C. (2021). Foreign Investment in emerging legal medicinal cannabis markets: The Jamaica case study. *Globalization and Health,* 17:38. https://doi.org/10.1186/s12992-021-00687-3

Sabaghi, D. (2022). Albania May Legalize Export-Only Medical Cannabis And Industrial Hemp. *Forbes.* Retrieved from: https://www.forbes.com/sites/dariosabaghi/2022/07/11/albania-may-legalize-export-only-medical-cannabis-and-industrial-hemp/?sh=3bd000854ccc

Sivasubramaniam, K. (2021). European Council adopts 0.3 % maximum THC levels. Natural Ingredients Europe. Retrieved from: https://www.nutraingredients.com/Article/2021/12/17/European-Council-adopts-0.3-maximum-THC-levels#:~:text=The%20European%20Council%20has%20adopted,from%20the%200.2%25%20currently%20allowed.

Stoa, R. B. (2017). Marijuana Appellations: The Case for Cannabicultural Designations of Origin, *11 Harv. L. & Pol'y Rev,* 513, 540.

Stone, H. (2012). Nicaragua coast becomes gateway for Honduras drug flights. *Insight Crime, Medellin, Colombia, and American Univ.* Washington, DC. Retrieved from: www.insightcrime.org/news-analysis/nicaragua-coast-becomesgateway-for-honduras-drug-fl ights.

UN General Assembly. (2016). *Outcome document of the 2016 United Nations General Assembly Special Session on the World Drug Problem – Our Joint Commitment to Effectively Addressing and Countering the World Drug Problem,* Resolution adopted on 19 April 2016, A/RES/S-30/1.

United Nations, (2022). Commodities at a glance: Special issue on industrial hemp. No. 16. Geneva: *United Nations Conference on Trade and Development (UNCTAD).*

UNODC (*United Nations for Organized Crime and Drugs*). (2023). World Drug Report 2023. 03 Herbal Cannabis for Medical Use: A Spectrum of Regulatory Approach. Retrieved from: https://www.unodc.org/res/WDR-2023/WDR23_B3_CH3_Medical_Cannabis.pdf.

Vizion Plus. (2023). Fermerët duan kërpin industrial, jo kanabisin (Farmers want industrial hemp, not cannabis). *Vizion Plus.* https://www.vizionplus.tv/fermeret-duan-kerpin-industrial-jo-kanabisin/ ¨

Wang, I. J., Brenner, J. C., Butsic, V. (2017). Cannabis, an emerging agricultural crop, leads to deforestation and fragmentation. Research Communications. *The Ecological Society of America*. doi: 10.1002

WIPO. (2019). Albania Joins Geneva Act of WIPO`s Lisbon Agreement. *WIPO*. Retrieved from: https://www.wipo.int/lisbon/en/news/2019/news_0003.html

WIPO. (n.d.) Summary of the Geneva Act of the Lisbon Agreement. *WIPO*. Retrieved from: https://www.wipo.int/treaties/en/registration/lisbon/summary_lisbon-geneva.html.