
Ecological Consequences of Mass Tree Felling in Ukraine's Carpathians and their Effect on Legal Support of Population Employment (on the Example of Zakarpattia Region in Ukraine)

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Abstract

Mass illegal felling of trees in Ukraine's Carpathians is one of the most crucial and dangerous modern ecological issues raised by the author of this article. The scale of tree felling has been estimated according to official government sources as well as international nongovernmental organizations; there has also been studied the fact of minimizing the magnitude of the problem by central state bodies. The correlation between the increase of illegal lumbering and the growth of illegal employment among population in Zakarpattia region was established. Specific propositions have been presented with respect to this problem at many levels, including legislative, organizational and legal, as well as international.

Keywords: Carpathian forests, forest fund, mass felling of trees, damage to forest cover, illegal logging and lumbering, fake sanitary felling, ecological disaster, timber smuggling, illegal employment

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INTRODUCTION

Ukraine ranks 9th in Europe in terms of forest area and 6th in terms of wood stock (Filippenko 2018). In the structure of the total forest fund Zakarpattia (southeast region in Ukraine) takes a special place. It is considered to have the vast majority of forests in the country. Forest area of the region comes to 740 thousand hectares (the second place in Ukraine in terms of wood stock). More than half of the landscape, species, as well as landscape diversity is concentrated on the territory of the region (Stankevich-Volosynchuk 2006). The significance of Carpathian forests for ecology and economy is invaluable. They play an important role in developing domestic and international tourism; apart from this, they perform ecological functions (water and soil protections, as well as water and climate regulation). According to many foreign and Ukrainian experts, Carpathian forests are considered to be the most productive ones in Europe. Part of the local species of flora and fauna are endemic. Moreover, beech forests that grow in the forests of this region have been inscribed on UNESCO World Heritage list.

According to World Wildlife Fund (WWF) 1% of the forests in Ukraine's Carpathians is cut down during the year, whereas the real rate of trees felling is 28 times as

high as the official data claims (Officialniy site VFDP v Ukraine 2019). The main reason for this is mass illegal felling of trees together with illegal logging and fake sanitary felling, which totally leads to serious ecological and socio-economic disasters.

It is significant that these are so-called "black loggers", who commonly perform illegal felling of trees and who are included into the official list of unemployed population. Since many Carpathian families benefit from such "business", it extremely influences the employment picture in this region.

The Origin of the Problem

Forestry development in Carpathian region started in late Stone Age (VI b.c.) and continued to gain momentum in the early Iron Age.

Although, mass felling of trees in the Carpathians' mountains took place in XVIII century and by XIX century the majority of forest areas reachable for human had been cut down (Krinitzky and Tretyiak 2003). Since the felling of trees was implemented in large areas, at that time it had already led to serious ecological consequences, including erosion of mountain soil, development of mudslides, as well as catastrophic flooding and windfalls. Later due to ruinous practice of

artificial planting of *Picea* monocultures (Semereka tree) some parts of forests are effected by rottenness and entomo pests, that as a result deteriorates biological resistance of forest ecosystems.

In the XX century negative anthropogenic impact in the form of extensive forestry development aggravated the ecological situation in the region. During the first 10-15 years after World war II ended at least 20% of forests area was cut down completely (Krinitsky and Tretyiak 2003).

It is highly significant to compare the dynamics of flooding between years from 1700 to 1941 (12 accidents) to a shorter period from 1948 to 1998 (15 accidents). Moreover, every next flooding in the second part of the later century was marked with more extreme mudslides and greater ground displacements.

It is worth mentioning that the real scale of mass tree felling in the Carpathians' mountains (amounts to 24 thousand square kilometers or 42% from the total area of the region) is difficult to estimate due to the fact, that the data of State Forest Cadastral Agency for forest fund of mountain parts in Carpathian region has not been updated since 1996 (Officialniy site Ukgoslesproekta 2019).

Therefore, extensive management in Carpathian region during XIX and particularly XX centuries led to reduction of forest fund and damage to local ecosystems. As a result, it triggered numerous ecological and socio-economic issues.

Scale of Tree Felling and its Ecological Consequences

Keynote of this problem is possible to express by quoting one German botanist K.A. Geyer: "Forest can resist to almost all destructive powers of nature. It is powerless to one enemy only – Human" (Gayer 1886).

Scale and Figures

It is a common knowledge, that forests regulate surface water flow in mountains region, protects ground from washing out (erosion), prevents development of mudslides and ground displacement, support hydrological balance in the territory as well as optimize climate.

Considering that forests in Carpathian region amount to 56,8 % from the total area with 80% of them situated in mountains it is not difficult to imagine how valuable they are for environment and people of this territory. Standard timber volume allowed from all

kinds of trees felling is 1.3 million cubic meters (Mitro 2014).

– In 2017 WWF published data about illegal or semi-legal felling of trees in Ukraine's Carpathians. According to their mission, the situation in Ukraine was way worse than expected. The analysis carried out by the experts at 149 objects for 1.5 year showed 1.4 million cubic meters of illegally cut timber above official amount of 4 million cubic meters. Four years prior the report of WWF, an area equivalent to 111 football pitches was illegally cut down in Carpathian region (Officialniy site VFDP v Ukraine 2019). The public report of WWF about project called "Forest guard: development of opportunities in Ukraine to fight illegal lumbering" (under support of International fund "Renaissance", as well as embassy of Finland in Ukraine and Forest Service in the USA) unveiled a GIS-analysis of changes of forest soil in Carpathian forests during 1986-2016. Experts exploited pictures taken from NASA "Landsat" satellites using the visualization method "TimeSync". The result was as follows:

– an average annual coefficient of forest soil damage at the specified period increased and amounted to on average 0,86%;

– the reason for forest soil damage were 92% of gradual and selective cutting, whereas 8% of damage was caused by nature factors;

– for 10 years from this 32-year period forest soil damage exceeded 1% of Ukraine's Carpathians (territory of Zakarpattie, Ivano-Frankivsk, Lviv and Chernivitsi regions in Ukraine) (Project Lisova Varta: Development of Opportunities in Ukraine to Combat Illegal Forest Deforestation, 2019)

One more foreign study, implemented by British nongovernmental organization called Earthsight, gave demonstrational results to this issue. In 2018 they published a report, which reflected two years of continuous studying of illegal lumbering in Ukraine and exporting the illegal timber to the UN market.

Experts of this organization claim, that the amount of illegal timber exported by Ukraine to the UN for the last years is higher, than in Latina America, Africa as well as Southeast Asia all put together (export increased by 75% for four years and exceeded 1 billion euro in 2017). Moreover, from 67 to 78% of lumbering is unreasonable or illegal (in terms of national scale illegal sanitary lumbering amounted to 38-44% from the total

production and export). Besides that, the seriousness of so-called “shady” lumber mills was mentioned, which according to experts, came to more than 12 thousand units. (Officialniy site Earthsight 2019).

It is significant to say, that the reaction of the central government bodies to the results of the studies was negative. While in the second case, State agency of forest resources of Ukraine (Officialniy site Goslesagentstva Ukraini 2019) described the results of Earthsight as vague, inconcrete and biased. **We consider this position of Agency way to prejudiced, as timber smuggling in Ukraine is closely connected to political corruption at the high governmental level.**

Official edition of the State Border Service in Ukraine, the newspaper “Pogranichnik” claims that in 2018 forest destruction in the country grew into large scale ecological disaster. Despite the fact, that forests grow on 16% of the territory of Ukraine (ranks 35 in Europe in terms of forestry) this figure is 3.9% less than optimal and is gradually decreasing due to mass lumbering (Filippenko 2018).

According to official data given by Goslesagenstvo, the volume of illegal lumbering amounted to 26 thousand cubic meters in 2017 (7 thousand of proven cases), at the expense of 157,5 million hryvnia, where only 5 % was compensated (Officialniy site Goslesagentstva Ukraini 2019). Still data about public ecological organization in Ukraine suggests that the problem is of higher extent than the figures stated by international experts show. As an example, one of the deputy's inquiry of deputy U.V. Boiko № ND/1601427 from 18.10.2018 addressed to Procurator General of Ukraine contained information about the volumes of timber smuggling exported to foreign countries in 2018 only, with the sum of more than 400 million euro (at least twice as high according to local people) and growth of these volumes in comparison with 2017.

The main factors, forming the core of the problem of mass tree felling, are stable and persistent demand from the UN for Ukrainian timber and hidden interest of officials at all levels in illegally obtaining money. It was political corruption that caused so-called fake “sanitary” trees felling (a comfortable way of officially minimizing the scale of industrial lumbering) as well as smuggling of the precious Ukrainian round timber to European markets in the guise of firewood. In 2016 a scandal broke out, due to the publication of the project called “Svidovets”, which was a plan to build a grand tourism complex by the representatives of

governmental authorities in the unique mountain part in Carpathian region. To perform this, they needed to cut down 14 thousand hectares of forest. Under the pressure of the local activists and ecologists the projects was temporarily suspended. However, this situation demonstrates general consumer, mercantile attitude of government officials to Carpathian forest resources.

Besides that, we can see unreasonably neutral and even tolerant position in reference to this issue of the central bodies of the United Nations Organization – Forum of the UN and Committee EAK of the UN for forest and forest industry. From the standpoint of economic interest of the UN to the cheap Ukrainian timber, we consider this situation of silent approval by the central European bodies (European Forest Commission EFC, Committee of the EFC for forestry, Ministry conference for protection of forests in Europe) of mass trees felling in Ukraine as prejudiced.

– *Consequences for environment*

Almost uncontrollable mass tree felling in Zakarpattia region for the last years has naturally led to the following negative ecological consequences:

1. Extreme soil erosion (61% from the total area of the region or around 100 thousand hectares eroded forests as well as 37 thousand hectares – highly or less eroded), and deterioration of agrochemical qualities of the soil (increase in area of acid soil)
2. Degradation of forests and its density.
3. Development of catastrophic mudslides (in 1998, due to extreme flooding 20 local people were killed), causing disbalance in water ecosystems:

– contamination of water by waste disposals of human, as well as industry disposals

– complication of breathing hydrobionts up to partial extinction of them due to water contamination

– toxic poisoning of the local flora and fauna as a result of mass extinction of living organisms in the process of destruction of their habitat.

It is worth emphasizing that these ecological disasters are triggered by other anthropogenic factors – including old-fashioned system of agriculture, extensive output mountain mines and accumulations of mineral resources.

Mass Tree Felling and Illegal Employment among Population: Correlation and Legal Aspects

The field of timber lumbering and processing takes one of the leading positions in the economy of Zakarpattia region. In terms of sold industry products, this region has one of the lowest positions in Ukraine.

According to the Main statistical department in Zakarpattia region, in May 2019 the level of employment among population in the age of 17-70 years came to 48%, employable population – 51.6% (Officialniy site GU statistiki v Zakarpatskoi oblasti 2019). This means that almost half of the employable population is unemployed or illegally employed. If we take working immigrants from this figure, as well as people working abroad (according to different opinions the amount adds up from 20-37%), the rest are consciously self-employed or illegally employed.

Specific socio-economic, demographic as well as natural and climate peculiarities of this region, and also deep crisis of the local labor market caused an extensive amount of officially unemployed, but employable population, who are naturally seeking for alternative ways of income. This thesis is proved by the second position of the region in the country among those who are self-employed (Kazuka 2016).

In such conditions demand for “shady” sources of income is observed, including informal, secret and illegal categories of employment. Their national legislation gives no concrete definitions, although one can notice them in special science literature. Thus, informal employment means as a rule unofficial labor relations (not documentally registered); secret employment is a labor activity, partly hidden from government in order to avoid taxation and insurance fees; illegal employment is described as legally forbidden activity (for instance, smuggling, poaching) (Gorodetska 2013).

Specialists say, that such situation is accounted for the fact, that government control over labor market in west near-border regions in Ukraine (incl. Zakarpattia) does not typically take preventing and proactive regulation measures (Iliyash 2014).

As it was mentioned earlier, in Ukraine are now functioning more than 12 thousand “shady” lumber mills which in respond has a natural demand for their labor, in the illegal employment segment.

The main legislative acts, regulating the sphere of employment in Ukraine, “About employment “ 2012 and the Code of laws about labor (K3oT) explicitly consider this form of labor activity as illegal, unlawful and provides different forms of sanctions, up to criminal ones. However, it is not stated in the acts regional labor and economic peculiarities - disbalance between demand and offer, low economic activity among local population and continuous local practice of “shady” lumbering.

In our opinion, the problem of illegal employment among population in Zakarpattia region in the lumbering sphere cannot be solved legally only, but economically, socially as well as ecologically. Overcoming the poverty among population, winning over corruption (including political corruption), strict control over nature and labor legislation combining with the penalties for violation of the later, this all is a real algorithm towards solving the problem of mass tree felling and issues, caused by it, including illegal employment.

CONCLUSION

The problem of mass tree felling in Carpathian forests is now becoming a real ecological threat to the region. The scale and rate of the felling, especially illegal, is always increasing with government not taking any measures as well as neutral position of international central bodies.

In order to prevent the imminent ecological catastrophe of Zakarpattia and to save the unique forest and ecosystems, as well as excluding new socio-economic problems, we strongly recommend the following steps:

1. At legislative level:

- develop and approve a law “About saving of the forest fund Carpath”, temporarily limiting of lumbering and firewood;

- introduce into the Forest Code of Ukraine a direct imperative form about national protection status of all Carpathian forests.

2. At organizational and legal level:

- implement comprehensive material revision of the Forest Fund of Ukrainian’s Carpathians (with the usage of modern satellite technologies and visualization methods) and giving data to the State Forest Cadastral Agency for forest fund;

- organize at the government level the so-called Forest inspection in Ukraine, independent from Goslesagentstvo and the State ecological inspection. (European Forest Commission EFC European Forest Commission EFC) with the demand to recognize at the international level the territory of Ukrainian Carpathians to be the zone of ecological disasters, as well as demanding corresponding rights and obligations.
3. At the international and political level:
- apply to the UN through center organization

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