

ПОВІТРЯНЕ, КОСМІЧНЕ, ЕКОЛОГІЧНЕ ПРАВО

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LEGAL PROTECTION OF FOREST ELEMENTS IN NATURAL ECOSYSTEM: CLASSIFICATION FROM REPUBLIC OF MOLDOVA

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Objective: this paper is examining the nuances in distinctions between various forestry elements and the corresponding legal approach for their protection. **Research method:** an integrated natural ecosystem approach is viewed as the first order of analysis and international guidelines are outlined; each building sub-domain (as forestry protection) represents the second order of analysis; the third level of analysis, which actually holds the practicality of legal implementation, is attributed to elements that through their variety form the national concept of forest. **Results:** verification of integrative approach between general guidelines and practical application of forestry norms. It has been observed the correlation and fit in categorization of forestry elements from judicial perspective. **Discussion:** management of genetic materials of vegetal nature and commerce of forest elements is still a disputable issue and requires a broader examination.

Keywords: forestry; legal protection; environment; ecosystem.

Problem statement. The trends of economic development have allowed the excess in the use of wood resources, the exploitation of the forest fund being the main cause of the constant degradation of this resource. The European Union holds 5% of the world's forest reserves, which is 182 million hectares. The degree of coverage varies from state to state, so the highest degree of afforestation has the Scandinavian countries with over 60% of the country's territory, and the Netherlands on the opposite side of the spectrum, has only 11% of its territory covered with forest. In 1997, the European Union adopted the forestry strategy, which proposes a series of joint measures with activities related in one form or another to the functionality of forest ecosystems [17, p. 23]. Although excessive logging is still a recognized problem in Europe, the forested area has increased by more than 10 million hectares since 1990. According to the United Nations, forests cover 30% of the earth's surface, by about 4 billion hectares. Sustainable management of forests and trees outside the forest fund is essential for

maintaining the ecological balance and implementing the 2030 Agenda for Sustainable Development Goals - SDG.15. „Sustainable forest management, combating desertification, halting and reversing land degradation, and halting biodiversity loss". Unfortunately, about 45% of the harvested wood is consumed as firewood [18, p. 125].

In order to avoid situations where economic interests are gaining ground in the face of public needs to ensure the protection of forest elements, the legislator prepares the favorable environment for environmental conservation and protection. The basis of the regulation of the norms of the environmental law in the field of protection of the forest regime in the Republic of Moldova is constituted by the Forest Code no. 887, adopted on 21.06.96. The publicly owned forest fund is managed by the forestry authorities, and the privately owned ones by the right holders, but with the observance of the management measures established by the central bodies in the field of environment [1, p. 60]. Of course, forestry relations are regulated by the Con-

stitution and other normative acts adopted in accordance with this code, and the use and protection of related elements such as water, soil, animal and plant kingdoms are regulated by current legislation by other organic laws and especially on the areas concerned. But in addition to general regulations, forest resources are also targeted starting with international treaties ratified by the Republic of Moldova with commitments for decades, international cooperation agreements, various strategies, national programs to specific legislative and normative acts of a technical-practical nature.

Main international directions of environmental policies that ground national legal protection of forest management. Through international agreements, countries set targets to reach and ensure balance of ecosystems formed by natural resources with transnational character.

Although a certain set of objectives appears general and can be attributed to first order of analysis, the ramifications that escalades through the regulation derived from international agreements are not necessarily of a general nature and can impose adopting legal specifications within national regulatory framework. A set of international policies and guidelines represent the pillars on which national regulator is developing the environmental norms:

A. *United Nations Conference on Environment and Development (UNCED)*. The United Nations Conference on Environment and Development (UNCED) is also known as the Rio de Janeiro Earth Summit, or the Rio Conference in June 1992, efforts of which have given rise to the crystallization of the following policy instruments: *Convention on Biological Diversity (CBD)*, signed at the Earth Summit; ratified by the Republic of Moldova in 1995; Signing of the *Convention on Climate Change (UNFCCC)*, a coercive document for Member States; *Convention to Combat Desertification (UNCCD)*, also signed at the Rio Earth Summit, ratified by the Republic of Moldova in December 1998; Kyoto Protocol, signed in December 1997 ratified by the Republic of Moldova in April 2003; *The Paris Agreement*, signed in April 2016, the stated purpose of which is to keep the average global temperature rise above 2oC ratified in June 2017; Forest principles, adopted at the *Rio Summit* - a document without legal character, but which presents the continuation of the *Ministerial Conference*

for the Protection of Forests of Europe MCPEE, initiated by the *Strasbourg Conference* in 1993 and these principles were later incorporated in the agenda of the *Helsinki Conference At the Rio Earth Summit* [21, p. 189].

B. *United Nations Forest Forum (UNFF)* or *United Nations Forestry Instrument (UNFI)* - The United Nations Forum on Forests was founded in 2000 by the *United Nations Economic and Social Council (ECOSOC* - one of the 6 main organs of the UN) as a high-level intergovernmental panel with the aim of promoting “*management, conservation and sustainable development of all forest types and strengthen long-term political commitment to this end*” [15] based on the Forest Principles and the Rio Declaration, the core functions being monitoring the implementation of forest-related agreements.

C. *European legislation:*

Directive on protection measures against harmful organisms and protection against their spread, 2000/29/EC: This directive is closer to phytosanitary legislation, but also provides for rules on the protection of flora, plants and health certification in this regard. According to Directive 2000/29/EC, plants are „*live plants and parts thereof which include seeds, fruit, vegetables, cut flowers, leafy branches, cut trees and botanical crops*” [9]. And for plants intended for planting, a distinction is made between plants to be replanted and those that are introduced into the habitat for the first time.

Directive on the conservation of natural habitats, of flora and fauna - 85/337/EC: A representative example that explains the relevance of this directive is known as (2005 Ireland vs. European Commission) when Ireland was accused of non-compliance with this directive, and the 3 reasons invoked by the Commission were (1) the absence of legislative uniformity in achieving congruence with art.12 and art. 13 of the Directive, (2) the maintenance within the national framework of rules contrary to Article 12 and Article 16 of the Directive, and (3) the lack of implementation of measures to implement the protection system, despite Ireland’s argument that the European Commission’s interpretation is misleading [10].

Directive on the marketing of forest reproductive material - 99/105/EC: At the same time, reference is made to Directive 71/161/EEC on external quality standards for marketed forest material [12],

and to Directive 77/93/EEC on measures against the introduction into the EU of organisms harmful to plants and other plant products [13]. This directive recognizes the importance of planting species and crops with greater adaptability to the climatic conditions for which they are scheduled for planting, so that the site corresponds to the genetic properties of trees to make reproduction more efficient, in line with the 3rd Ministerial Conference on Planting Forest Protection - MCPPE (FOREST EUROPE) in Lisbon (1998) to maintain a balanced origin of propagating material crops and geographical location for afforestation or especially reforestation [11].

Environmental Liability Directive for the Prevention and Remediation of Environmental Damage - 2004/35/EC: Through this directive, the European Union intends to reduce customs duties on the environment and species in natural habitats, and as this directive covers the field of "environmental liability", the principle underlying it is "the polluter pays" and the implementation of the directive is ensured by the bodies recognized by the European Commission [14].

Analysis of national juridical structuring of forestry elements. Before proceeding to the analysis of the legal protection of forest resources, it is necessary to understand the conventions provided by the legislator for the basics of forestry legislation. Thus, to delimit the terms:

1. *Forest fund*. According to the Forestry Code, art. 2, the forest fund includes all forests without delimitation of the owners of the property right and the form of management, as well as all lands destined for afforestation, reforestation, those affected to the forest management as well as the non-productive ones but which are included in the land cadaster [1].

2. *Forest*. In order to describe the forest convention, and to understand which category of forest resources the rules that include the phrase "forest" refer to, the legislator introduced the territorial quantitative parameter. Respectively, they are considered forests, lands covered with forest vegetation with an area of over 0.25 hectares. The forest fund of the Republic of Moldova constitutes a little over 12%, but this number is increasing mainly from the category of forest fund from private property. Regarding the norms of forest use, the legislator prohibits clear felling of forest elements on parquets

larger than 2 ha (of course with the observance of the terms of engineering and transportation), of (2), art. 34, Forestry Code no. 887 of 21.06.1996 [20].

3. *Forest vegetation*. As forest curtains and botanical, zoological, dendrological gardens are not included in the category of forest fund (Forest Code, art. 5), these green spaces are considered to be part of the vegetation outside the forest fund. It should be noted that forest curtains along roads and agricultural sectors are imperative to ensure the viability of natural ecosystems. They play an important role both in drought situations and in frosts or soil erosion [6]. Thus, one of the factors reducing crop yields in agricultural sectors is the absence or neglect of forest curtain protection. Depending on the composition, they can be pure from a singletree culture, or by mixed planting. In Romania, the protection strips have a special law - law no. 289 of 15.05.2002 regarding the forest protection curtains. In the Republic of Moldova, forest curtains, after contributing to combating natural disasters, are categorized into (according to art. 6, Forestry Code of the Republic of Moldova):

3.1. *Forest soil protection curtains*. It can be mentioned that, in 2003, the program for capitalization and increase of soil fertility was approved by Government Decision no. 636 of 26.05.2003, which expressly mentioned the negative impact in the soil degradation process and that over 55% of agricultural lands are affected by this process to one degree or another, today over 17 years, it can be found that this indicator has not been improved. Decision no. 636 provided for territorial-organizational and agrotechnical works for improvement of the land quality through the reconstruction of the forest protection strips of the soils [4], but it was abrogated by Decision no. 796 of 25.10.2012.

3.2. *Forest orchard protection curtains*. Although the legislator does not expressly provide for the regulation of the protection curtains regime located on agricultural lands (as Romania does by law no. 289 of 2002), but this category of forest vegetation is under the competence of local public authorities. It covers an area of about 27 thousand hectares.

3.3. *Forest curtains for the protection of water basins*; these are called by the legislator and protection strips. Thus, the regulation of the protection regime of rivers and water basins against pollution

and other negative effects of anthropogenic factors is provided by the Law on areas and strips for the protection of rivers and water basins no. 440 of 27.04.1995. The width of the forest curtain varies depending on the length of the river, for example, for rivers up to 50 kilometers there is a protection strip of at least 15 meters, for a small river - 20 meters, for a medium river - 30 meters, and for a large river - 40 meters. The river curtain must exceed 40 meters in width (and if the shore is concave in shape, the width of the forest curtain must be at least 5-20 meters higher than the minimum value indicated in art.9, para.2, Law No. 440/1995). For the violation of these norms, the administrative contravention is applied, for example, art. 109, p. 5 of the Contravention Code of the Republic of Moldova provides for the application of up to 18 conventional units to the natural person and up to 120 conventional units to the legal entity, in case of non-compliance with the limits and protection regime of forest water curtains. If the forest norms for the use of the forest prohibit felling in the forest larger than 2 ha, the cutting of trees and shrubs can be carried out on parcels no larger than 1 ha (of course, also respecting the terms of accession and creating the necessary conditions for related activities) p. (e) art. 12. from Law no. 440/1995 [8].

3.4. *Forest curtains to protect roads and railways.* According to the Government Decision no. 350 of 12.07.2001 for the approval of the Strategy for sustainable development of the forestry sector in the Republic of Moldova, the forest vegetation in the protection curtains along the communication routes is 2.4 thousand hectares, and that in the perimeter of the localities, over 47 thousand hectares. Although there is no law on the regime of forest curtains for the protection of agricultural soils and lands, the executive equips us with a Government Decision on the planting of walnut strips along public roads, no. 1300 of 13.11.2006, which provides for the collaboration between several central structures for the implementation of this project - for planting forest curtains [5].

4. *Forest resources.* Forest resources represent the wood mass of forests and forest vegetation, as well as other forest products, which are divided into: *Wood products* - wood mass and the results of the main and secondary cuts of hygiene and care; and *Non-wood products* - forest by-products such as wild berries, fruits, snails, game production, edi-

ble mushrooms and medicinal plants that represent value for both forest dwellers and stakeholders in scientific research, recreation, etc. Although citizens' access to harvest forest products is free, their trade is prohibited and access itself may be restricted by the decision of the local public authority (Forestry Code, art. 23). According to Law no. 591 of 23.09.1999 regarding the green spaces of urban and rural localities, green space is "an architectural system of weighting elements from urban and extralocal, harmonized between them, of urban and rural localities, important from an aesthetic, biological and ecological and which also includes a community of vegetation elements (trees, shrubs, flowers and grass) and animal species" [19, p. 314]. The classification of green spaces is done according to several criteria - location, functionality, access, etc. The difference between the park, the garden and the square is most correctly defined by its surface, as follows: *The park* - green space with an area of over 20 hectares that offers a rich plant variety; *Garden* - green space with an area of 3-20 hectares, arranged for recreation; *Square* - green space with an area of up to 3 hectares, located mainly between streets. The administration of green spaces that are on public land is exercised by the local public administration authorities, and those that are on private property - by the owners of that land. The agrotechnical norms for the regeneration and care of green spaces are generally valid both for the public bodies empowered with this responsibility and for natural and legal persons with private property rights [16, p. 296-297].

Discussion and conclusions. The care of the forests is carried out on the basis of forest arrangements, and in order to carry out felling works, only the care works are allowed, taking into account the productivity of the tree, composition, age of exploitability, and the necessity of the respective activity. Technical guidelines are being elaborated by national forestry professionals, and adopted as regulatory framework by implementation institutions (Forestry Agency), which are subordinated to central authority in the sphere of environment (Ministry of Agriculture, Regional Development and Environment), yet the norms are being tailored in alliance with international classification of each element from ecosystem, even to tiniest nuances [3].

In case of receipt of the written request for deforestation (in Chisinau), the Green Spaces Inspectorate Section evaluates the request and examines the condition of the tree on the spot, and after evaluation or informs the applicant about the satisfactory condition of the tree or accepts the request and draws up the document plant. The director of the Municipal Enterprise of the Green Spaces Management Association approves the phytosanitary act and requests the environmental bodies to issue the deforestation permit, which in turn decides on the issuance of the permit or not following their own investigations [2]. After the deforestation permit has been issued, it together with the phytosanitary act is sent by the Green Spaces Inspectorate Section to the Deforestation and Tree Cleaning Service, which performs the deforestation works and draws up the act on the wood obtained.

The importance of green spaces is often underestimated but its functional benefits have a considerable contribution to maintaining the ecological balance of the urban ecosystem. Regardless of their specific destination, green spaces improve the quality of the environment, the local genofond and enrich the assortment of ornamental plant elements, as well as keep the artificial landscapes in harmony with the natural ones to facilitate the favorable development of human activity. The forest elements represent an essential component of the natural ecosystems, as they become the shelter of different species of fauna [7], they allow the proper development of the dynamics of the other elements of the infrastructure in order to maintain the ecological balance and thus, should be managed in accordance to its specifics.

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ЮРИДИЧНИЙ ЗАХИСТ ЛІСОВОГО ГОСПОДАРСТВА В ПРИРОДНІЙ ЕКОСИСТЕМІ: КЛАСИФІКАЦІЯ РЕСПУБЛІКИ МОЛДОВА

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Мета: стаття присвячена дослідженню особливостей різних елементів лісового господарства та відповідний правовий підхід до їх захисту. **Метод дослідження:** у статті застосований інтегрований підхід, що базується на вивченні екосистеми як першоелемента природи, а також проводиться аналіз міжнародних настанов та становить першу сходинку в комплексному аналізі даного питання; кожен елемент екосистеми (як захист лісового господарства) відкриває наступний елемент аналізу; третій рівень аналізу, який фактично дотримується практичності правового впровадження, приписується елементам, які через свою різноманітність утворюють національну концепцію лісу. **Результати:** завдяки застосуванню інтегративного підходу між загальними настановами та практичним застосуванням лісових норм було помічено співвідношення та відповідність категоризації елементів лісового господарства з юридичної точки зору. **Обговорення:** управління генетичними матеріалами рослинного походження та торгівля лісовими елементами все ще залишається спірним питанням і вимагає більш широкого вивчення.

Юридичний захист лісового фонду здійснюється на основі відповідного законодавства та правових домовленостей, а для проведення вирубки дозволяються лише доглядові роботи з урахуванням продуктивності дерева, складу, віку експлуатаційності та необхідності відповідної діяльності. Технічні настанови розробляються національними спеціалістами лісового господарства та приймаються як нормативна база Агентства лісового господарства, яке підпорядковується центральній владі у сфері охорони навколишнього середовища – Міністерству сільського господарства, регіонального розвитку та навколишнього середовища.

Важливість зелених насаджень часто недооцінюється, але їх функціональні переваги вносять значний внесок у підтримку екологічного балансу міської екосистеми. Незалежно від конкретного призначення, зелені насадження покращують якість навколишнього середовища, місцевий генофонд та збагачують асортимент декоративних рослинних елементів, а також підтримують штучні ландшафти в гармонії з природними для сприяння позитивного розвитку людської діяльності. Елементи лісу представляють важливу складову природних екосистем, оскільки вони стають притулком різних видів фауни, вони дозволяють належним чином розвивати динаміку інших елементів інфраструктури з метою підтримання екологічної рівноваги, а отже, повинні управлятися відповідно до його специфіки.

Ключові слова: лісове господарство; правовий захист; довкілля; екосистема.