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THE EVOLUTION OF THE LAWS REGULATING ACCESS TO FORESTS AND AQUATIC RESOURCES OF THE GRAND DUCHY OF LITHUANIA UNTIL THE MID-16TH CENTURY

KEYWORDS: aquatic resources, forest resources, legal regulations, Grand Duchy of Lithuania, protection, use, Jagiellonians

ABSTRACT: In the 13th and the 14th century, grand dukes had exclusive rights to the forests and aquatic resources of the Grand Duchy of Lithuania. They maintained these rights in the 15th century despite the fact that the rights to royal forests and aquatic had been widely distributed since the reign of Vytautas. Beginning in the second decade of the 16th century, grand dukes became increasingly interested in the productivity of land belonging to the Grand Duchy of Lithuania, in particular forests and aquatic resources. Their concern was largely motivated by the financial burden placed on the Lithuanian treasury in connection with the Muscovite-Lithuanian wars and the economic reforms implemented by Queen Bona and Sigismundus II Augustus. The monarchs passed laws regulating access to royal land in the Grand Duchy of Lithuania. These regulations improved the management of royal land, protected forests against illegal logging and prevented excessive exploitation of water fauna (especially fish).

Foreign travellers who visited Lithuania between the 14th and the 16th century (Gilbert de Lannoy, French humanist Ludwik Le Roy and Venetian deputy Hieronim Lippomano) described Lithuania as a country full of lakes and great forests (Komaszyński 1986, 24-25).

Lithuanian forests provided excellent habitats for various animals, both smaller species (*animalia minuta*) and large game animals, including the impressive European bison that enjoyed the status of a royal animal. Bison refuges were found in Grodno Primeval Forest in the upper reach of the Dowspuda river (presently the Rospuda River) near the Prussian border, and in the forests of the Region of Podlasie (Alexandrowicz 2012, 135-138; Рэвизыя пушч 1867, 52). These attractive regions were used as hunting grounds by local rulers who engaged in this favourite pastime (Sucheni-Grabowska 1996, 66).

Witold and Władysław Jagiełło as well as other Jagiellonians hunted bison, bears, deer, elk, wild boars and other local fauna in Lithuanian forests. Beavers

inhabiting the banks of Biebrza, Narwia, Szesupy, Nemunas and other rivers and rivulets in Lithuania and the Grodno region were also hunted upon the rulers' request. Attempts were made to protect Grand Duchy's forests against excessive exploitation and poaching by local inhabitants.

The first laws concerning the protection of forests and water resources were introduced by the Jagiellonians (reforms introduced by Kazimierz Jagiellończyk in 1469-1476), and they were further expanded by Sigismund I the Old and Sigismund II Augustus. The management of forest resources was entrusted to rangers who were civil officers of the Grand Duchy, and their servants (*osoczniczy*). Their task was to prepare the grounds for royal hunts and to guard the precincts of Lithuanian forests against illegal logging and poaching. Another group of forest rangers (*hajewnicy*) was responsible for beekeeping, hunting beavers for the rulers and safeguarding the interests of grand dukes (Kołodziejczyk 2007, 338-349; 2002, 36-37; Śliwiński 2010 150-154ff.).

This article discusses the evolution of the laws regulating the use and protection of natural resources (forests and water bodies) owned by the Grand Dukes of Lithuania in the regions of Podlasie and Grodno. In the 16th century, Podlasie and Grodno were administrative regions of Lithuania (Podlasie until 1569) which were part of the Trotsky Province created in 1413. Podlasie and Grodno experienced frequent changes in their political status, and by the end of the 14th century, these dense forest districts remained under the administrative and economic influence of the great Lithuanian dukes who competed for access to forest resources the Teutonic Order and Mazovian dukes. In the early 16th century, Podlasie, in particular the northern part of the region, was largely controlled by Mazovian settlers, and in 1513, it was separated from the Trotsky Province. This measure was introduced to facilitate the administration of the territorially extensive Trotsky Province. At the time, the Podlaskie Voivodeship was composed of six administrative districts. Following the administrative reform of 1566, the territories of Brest, Kamieniec and Kobryn and Turowo were further separated from the Podlaskie Voivodeship. The resulting Podlasie region was annexed to the Crown in 1569, and it constitutes the subject matter of the analysis in this study (Pietkiewicz 1995, 54; Kołodziejczyk 2012 22-39ff.).

For the needs of this study, the district of Grodno is defined as the Grodno powiat on both sides of the Nemunas River in the Trotsky Province. Following the administrative reforms of 1565-1566, the powiat of Przełom and the southern part of the Przemyśl powiat were included in the Grodno powiat, thus creating one of the largest territories in the western part of the Grand Duchy of Lithuania (Błaszczuk 2002, 117-125; Jakubowski 1934, 1-16ff.; Kołodziejczyk 2007, 315-316).

In the 16th century, Podlasie and Grodno were separate administrative regions, but they should be analysed jointly in the context of economic history on account of historical and geographical ties as well as the presence of Jagiellonian

estates that were operated on common administrative and economic principles. In view of the scarcity of dispersed and incomplete sources, this approach supports the reconstruction, even if incomplete, of the regions' common past in the context of the development and management of the land owned by the Grand Duchy of Lithuania.

Podlasie and Grodno were characterised by a more severe climate than other parts of the Grand Duchy of Lithuania, a predominance of medium and weak soils, as well as a relative scarcity of mineral deposits. For this reason, the economic use of forests and waters was more profitable than farming. A dense network of large rivers (especially in Podlasie) facilitated transport, and the discussed regions as well as other Lithuanian forests became prominent suppliers of wood for the timber market in Gdansk (Krannhals 1942, 110; Trzoska 1966, 76). Timber rafting on Bug, Narew and Biebrza Rivers played an important role in this process. Shipping ports were established in Narew, Suraż and Tykocin on the Narew River, in Mielnik and Drohiczyn on the Bug River, and in Goniadz on the Biebrza River. Rivers Supraśl and Nurzec (right tributary of the Bug River) were also major connections to the Narew River system (Romaniuk 2002, 69-87).

In the Grand Duchy of Lithuania, trade began to flourish only in the 15th century after peaceful relations had been established with the Teutonic Order in 1422 (Małowist 1973, 25).

The revival of colonization and technical progress created favourable conditions for trade in forest and agricultural products in the 15th and 16th centuries. The development of trade was fuelled by high demand for timber, wax and fur in Western Europe. At the same time, population growth in the discussed areas increased internal demand for forest products for construction and daily business operations. Food supplies also increased, and fish, which was traditionally consumed during Lent, played a significant role. The demand for fish increased the use of water resources and fisheries that had been previously exploited for own needs, and it led to the development of fish farms.

In view of the above, in the 16th century, the forests in Podlasie and Grodno characterized by favourable environmental conditions were regarded by Lithuanian rulers as a significant source of income that did not require substantial investment. In the discussed region, forests, lakes and rivers had been traditionally exploited by villagers and townsfolk (Alexandrowicz 2011, 95-117). Until the 16th century, local community members had been entitled to special privileges (*wchody*) enabling them to exploit forest resources for own needs, excluding hunting for big game and hunting with dogs (Łowmiański 1923, 398-466; 1924, 1-30).

The need to preserve forests for the benefit of future generations was rarely recognised. Such attempts were limited to private forests that were regarded as a source of massive profits. The economic exploitation of forests was an income-

generating activity for local residents, in particular tenants of ducal estates and foremans (*starostowie*) who managed territories abundant in forests (Górczyński 1935, 10-13).

In the 16th century, the unrestrained use of forests in Podlasie and Grodno as well as forests owned by grand dukes in other Lithuanian regions met with opposition from the Jagiellonians. This changed the way forests, a major source of income, were managed. Consequently, more attention was paid to the protection and rational use of forests to secure royal incomes and needs (maintaining royal hunting grounds in the Knyszyn Primeval Forest by preserving the forest understory). However, the Jagiellonians fiercely defended their rights to forest resources and exploited the much depleted royal coffers in order to gain significant influence over Grand Duchy's revenues. Forests were leased to suppliers and producers to generate an income, and forest resources were not managed in a reliable manner (it should be remembered that no tax was paid on forests or land under forests).

In the discussed region, timber and wood products were the most profitable exports in the 16th century. Pine, oak and aspen timber was used for wall panelling and the construction of sail ship masts. The most valuable items in wood trade included masts with a circumference of several meters at the base that narrowed down to not less than 1.3 m at the height of 22-30 m; square wooden logs carved on three sides with a length of 2.7-6.0 m and width of 30-40 cm (*wańczos*); split, unprocessed bales of various sizes for the production of staves (*wasilki*); variously sized staves from different types of wood (*faszole, pypa*), where oak staves were most valuable (Hedemann 1934, 40-46; Wyrozumski 1959, 269-279). The Podlasie Primeval Forest was also a major source of raw materials for the timber industry, including ash, charcoal, tar and turpentine. Tar and potash were exported to Gdańsk (white potash from deciduous trees, especially oak, was most highly valued) (Sarnecki 1960, 8-9).

The revenues from the sale of timber and forest products were to be transferred in full to the treasury. However, this was rarely the case. Many wood products were sold by tenants who did not share the proceeds with the treasury. The auditors responsible for managing Grand Duchy's resources frequently reported on significant losses in Lithuanian forests and tenants' failure to pay their dues to the treasury (Kołodziejczyk 2010, 59-64). These practices jeopardised the economic interests of the Jagiellonians who passed various laws preventing unauthorised access and excessive exploitation of Grand Duchy's forests. In 1547-1554, a state monopoly was introduced for the export of timber and wood products from Grand Duchy's forests and private forests. However, the monopoly was strongly opposed by the nobility, and it was abolished (Żabko-Potopowicz 1974, 27).

Other restrictions on the use of forest resources for the production of forestry goods had to be introduced. These problems were addressed by the "Act of our manors" of 1542 which expressly forbade parties other than the

owners' representatives from producing tar, *wańczos*, potash and staves from wood harvested from grand dukes' forests. "The Forest Act" of 1567 also prohibited the arbitrary production of these goods (Ustawa leśna z 1568 r. [zamiast 1567 r.], "Athenaeum" 1844, 4).

On the other hand, in 1557, Sigismund II Augustus decreed "The Voloč Act" which enabled the local populace to harvest trees for firewood and timber for building their own homes only in the locations designated by the royal auditors (Ustawa na woloki, 550). These restrictions were not sufficient, and in 1567, "The Forest Act" further narrowed down the use of local timber upon a forester's consent to 1 wagon in summer and 2 wagons in winter (Ustawa leśna z 1568 r. [zamiast 1567 r.], "Athenaeum" 1844, 11).

Forest thinning to obtain timber and its derivatives was accompanied by the reorganisation and intensification of agricultural production in Lithuania's ducal estates, and these processes were collectively referred to as the *volok* measurement. The *volok* measurement was one of the most important reforms affecting the geographical environment of the Grand Duchy of Lithuania. The reforms were initiated by Queen Bona, and they were supported by the Lithuanian nobility who were keen on gaining a share of the ruler's growing profits from the reformed land. The changes in the structure of the Jagiellonian estate in Lithuania were initiated by the ruler shortly after 1533 and were continued by Sigismund II Augustus from around 1547 (until 1561). The *volok* measurement transformed ducal property into structured and organised economic units based on the drag, a new unit of land measurement ranging from 30 to 36 acres (mostly 30 or 33 acres or 21.3 ha or 23.5 ha). Land taxes were levied based on cadastral records, which was a huge novelty not only in the tax system applicable to ducal estates, but in Lithuania in general. At the same time, the scattered land plots occupied by the settlers were consolidated, villages were reorganised as settlements with a main road, and ducal and private estates were delimited. The administration of forest and water resources was regulated (Ochmański 1986, 165-174).

The *volok* reform contributed to settlement of empty areas and the establishment of farms. Forest thinning and settlement increased the area of arable land each year.

Similarly to forests, the rivers and lakes of the Grand Duchy of Lithuania had also been long exploited for their natural resources by the local population (Die Chronik Wigands von Marburg 1863, 634; Regesta historico-diplomatica Ordinis S. Mariae Theutonicorum 1198-1525 1948, No. 2152, 134; Kasperczak 1965, 200-202). Water resources could be accessed not only by hereditary or hired owners, but also by the local population who had to donate a part of their catch to the grand duke. This duty had been described in historical records dating back to the 14th century, and it continued to be borne in the 16th century (Любавский 1892, 385; Łowmiański 1931, 302).

However, unlike hunting restrictions, the fishing laws did not indicate the species of fish that could be caught or the tools that could be deployed in the process. The settlers were allowed to catch fish only for own consumption with the use of small fishing tools. These regulations complicated the proper management of fish resources, and additional bans and restraints had to be introduced, especially in the 16th century.

The settlers, boyars, clergy and townsfolk were also provided with fishing rights in ducal estates. Such privileges had been granted in recognition of service since the times of Duke Witold (Górzyński 1964, 52-53). Groups of professional fishermen evolved in cities that received fishing rights with municipal privileges. During the census carried out in Podlasie in 1576, the town of Narew had seven professional fishermen and Tykocin had nearly thirty (Census of Podlasie Voivodship 1570 and 1576 1959, 5, 68, 92). Professional fishermen also resided in other cities in the region (Писцовая книга гродненской экономии 1882, 458-459).

Rivers and lakes were also directly exploited in grand dukes' estates. In these areas, fish were caught by dedicated groups of dependent settlers who were known as osprey fishermen. In addition to fishing for the rulers, they were also allowed to fish for their own needs and for sale, but they had to donate fish or pay the appropriate fees to the treasury as compensation.

Osprey fishermen were also responsible for maintaining fishing equipment in good condition and protecting large bodies of water against poaching. Fishermen were subordinated to settlers who had been paid by the dukes to manage their estates. During seine fishing (seines were large nets with two wings spanning up to 200 m that ended in a sack trap), osprey fishermen were supervised by a fishing master (*niewodniczy*) (Hedemann, 167). Hired labourers from ducal estates were also employed for fishing services (The referendary books I 1582-1602 1920, 27).

In consequence of the reforms initiated in the early 16th century, the existing fishing methods became inadequate. Technical innovations and modern management methods had to be introduced to protect the water resources in ducal estates and to promote the development of aquaculture. Fish farms were established in areas deficient in water to derive additional income.

Fish farms (*niewodnictwa*) were created in ducal estates with supportive environmental conditions, and they were tasked with managing lake fisheries and maximising profits. Fish farms consisted of several lakes, and they were managed by ducal officials (*niewodniczy*) rather than professional fishermen. Fish farms were not established in Podlasie, but they were created in Grodno and Przemyśl poviats, and the first known fisheries manager was Molawica leaseholder Benesz Młynarewski (Officials of the Grand Duchy of Lithuania 2009, no. 1855, 278; Dovnar-Zapolskiy 1901,76).

More than seventy fishermen were employed in the Grodno fishery in the mid-16th century, including fishing masters (*garmistrz*) (Falk 1941, 26; 1979, 57-58)

who were skilled at determining lake depth and identifying the most favourable locations for seine fishing (Писцовая книга гродненской экономики 1881, 329-331). The fisheries in the Grodno region harvested hundreds of tonnes of fish and generated significant profits for the last Jagiellonians (Regestr sPisania Iezior Je^o Kro M ku Niewodnicthwu Grodzienskiemu y Przelomskiemu należących 1941, 1-11).

Individual fishermen as well as hired labourers were also employed to catch fish for the Grodno foremen.

In the 16th century, the growing wealth of gentry in Podlasie and Grodno who profited from the flourishing trade in wood and grain and the construction of new Jagiellonian manors and ducal castles contributed to a steep increase in demand for fish. Due to fishing restrictions in rivers and lakes, fish ponds had to be created to cater to growing demand. The number of fish ponds increased at the highest rate in private estates and ducal estates in Podlasie. Trout, carp and other fish species were bred in ponds (Central Archives of Historical Records, Archives of the Crown Treasury, sec. LVI, K-11,18; sec. XLVI, sign. 149, 123; sec. LVI, sign. G-6, 110; Maroszek 1993, 12-18).

Similarly to the laws that limited timber harvests in ducal forests, fishing restrictions were also imposed on rivers and lake in ducal estates for economic reasons. Attempts were made to control the exploitation of water resources and monitor the observance of proprietary rights in the Lithuanian Statutes. The "Act addressing all manors in Vilnius and Trotsky poviats" stipulated that all incomes derived from lake fishing were to be transferred directly to the treasury. Tenants were allowed to fish only for their own consumption (Ustawa pisana dla wszystkich dworów Wileńskiego powiatu, tak i Trockiego 1892, XIX-XXI).

"The Volok Act" of 1 April 1557 was a fundamental edict containing several dozen articles, including provisions that regulated pond management. Ponds could be drained only upon the ruler's explicit consent, and territorial administrators had the right to keep every tenth fish, but were not allowed to fish in other ponds, including for own consumption. Only the grand duke's subjects were granted perpetual access to rivers and lakes, but fishing practices were limited to the use of small nets. Fishing in lakes was prohibited in April, May and June, and weirs could not be built on rivers, especially during spawning, because they decimated fish populations (Ustawa na woloki, 1914, 542-586, 559, 584-585, 576-577; Hedemann, 160).

Fish farming was also regulated by the "Act on castles, leaseholds and manors of the Grand Duchy of Lithuania" which was probably passed in 1567. The act set the rules relating to the location of fish ponds, fishing seasons, sources of finding and the operation of the existing ponds in a manner that did not reduce the ruler's income (Ustawa zamkow, dzierzaw y dworcow 1914, 599-622).

The use of rivers and lakes in ducal estates was also regulated by "The Forest Act" of 1567. The act prohibited the blocking of weirs on rivers that connected lakes (Ustawa leśna z 1568 r. [zamiast 1567 r.], "Athenaeum" 1844, 7-8).

The 16th century witnessed considerable changes in the economy of Podlasie and Grodno, including in royal estates, and these processes influenced the local environment. The increased demand for timber which was rafted from Podlasie to Gdańsk on the Vistula and then shipped to Western Europe contributed to trade in forestry goods not only from private forests, but also from the forests in royal estates. Similarly to forest thinning, the development of aquaculture and intensive use of stagnant and flowing waters exerted a considerable environmental impact on Podlasie and Grodno in the 16th century.

The measures implemented by the Jagiellonians to restrict the exploitation of local forests and Lithuanian forests belonging to the great dukes were not highly successful, also because the Jagiellonians participated in the plunder. Forest area gradually decreased, and most of the preserved fragments (excluding the Knyszyn and Białowieża Primeval Forests) were deprived of the most valuable species of deciduous trees, especially oaks. The meaning of the word *wilderness* also evolved, and it was increasingly replaced with *forest*. Deforestation and economic progress destroyed forest habitats and reduced the species diversity of forest animals (Central Archives of Historical Records, Archives of the Crown Treasury, sec. XLVI, sign. 149, 123; sec. LVI, sign. G-6, 110; Рэвізья пушч і пераходаў зверынных 1867, 28). Water resources and fish stocks enjoyed better protection, but valuable species were also lost. Profit-oriented activities aiming to cater to the growing financial needs of the Grand Duchy of Lithuanian and the last Jagiellonian rulers had a significant environmental impact.

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