

## The State in the Swamps: Territorialization and Ecosystem Engineering in the Western Provinces of the Late Russian Empire

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### SUMMARY

This article argues for the integration of environmental perspectives into historical studies of territorialization. Using the case of the Western Expedition for the Drainage of Marshlands in Polesia (1873-1902), it shows that the transformation of the environment was one of many means by which the government of the Russian Empire sought to integrate the imperial territory and to develop regions that were considered backward. Three factors shaped these territorialization efforts in Polesia: firstly, the desire to foster economic development in rural areas; secondly, the role of the state as landowner; and, thirdly, a widespread consensus regarding the economic uselessness of wetlands. The canal network built by the Western Expedition improved conditions for commercial forestry in Polesia and connected the region to important transport routes. Yet, canal construction and river straightening measures were contested, as they subordinated existing land and water use practices to the interests of the central government. The example of the Western Expedition demonstrates that the concept of the “ecosystem engineer” can help to analytically grasp the ecological dimension of imperial rule. At the same time, the case is symptomatic of a new paradigm in the relationship between state and nature in modern Russia: Environmental change was not a side effect of the state’s territorialization efforts, but an actively applied means of spatial consolidation.

**KEYWORDS:** Russian Empire, territorialization, wetland drainage, ecosystem engineering, Polesia, forestry, rural development

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In 1873, the Tsarist government launched the Western Expedition to explore and assess the prospects of wetland drainage in Polesia. Located in the south-east of the province of Minsk, the region was known for its extensive wetlands stretching along the Pripiat River and its tributaries, slow economic development and poor transportation infrastructure. The expedition was motivated by concerns about the low productivity of agriculture and forestry in the area, as Polesia's marshy landscape impeded the cultivation of grain, vegetables and fodder crops and constrained the growth of trees suitable for commercial timber production. At the same time, contemporaries believed that draining the swamps would improve communications within the region, where villages happened to be entirely surrounded by water for many months of the year, while also connecting Polesia with other parts of the Russian Empire. Ecosystem engineering in the empire's wetlands was meant to promote both rural economic development and the integration of the imperial space.

The drainage expedition in Polesia contributed to the construction of an imperial identity centered around science, technology and spatial consolidation. Mirroring a larger trend of "imperial self-exploration,"<sup>1</sup> it produced exhaustive scientific accounts of the botany and geology of the region. With its detailed maps and surface profiles, the 1899 "Atlas of the Western Expedition for the Drainage of Marshlands" was an outstanding example of late imperial Russian cartography (figure 1)<sup>2</sup> and an illustration of the nexus between the Russian imperial project and the rise of geography as an academic discipline.<sup>3</sup> At the same time, the Western Expedition was embedded in an international trend towards the concerted (largely state-driven) drainage and agricultural appropriation of wetlands.<sup>4</sup> In fact, contemporaries in the Russian Empire

<sup>1</sup> KARL SCHLÖGEL: *Raum und Raumbewältigung als Probleme der russischen Geschichte: Zur Einführung*, in: IDEM (ed.): *Mastering Russian Space: Raum und Raumbewältigung als Probleme der russischen Geschichte*, München 2011, pp. 1-25, here pp. 4-5.

<sup>2</sup> G. I. TANFIL'EV: *Bolota i torfianiki Poles'ia* [The Swamps and Peatlands of Polesia], Sankt-Peterburg 1895; *Atlas po ocherku Zapadnoi Ekspeditsii po osusheniiu bolot, 1873-1898* [Atlas of the Western Expedition for the Drainage of Marshlands, 1873-1898], Sankt-Peterburg 1899.

<sup>3</sup> STEVEN SEEGEL: *Mapping Europe's Borderlands: Russian Cartography in the Age of Empire*, Chicago—London 2012.

<sup>4</sup> DAVID BLACKBOURN: *The Conquest of Nature: Water, Landscape, and the Making of Modern Germany*, New York 2006; RITA GUDERMANN: *Morastwelt und Paradies: Ökonomie und Ökologie in der Landwirtschaft am Beispiel der Meliorationen in Westfalen und Brandenburg, 1830-1880*, Paderborn et al. 2000; JANA OSTERKAMP: *Wasser, Erde, Imperium: Eine kleine Politikgeschichte der Meliorationen in der Habsburgermonarchie*, in: JÖRG GANZENMÜLLER, TATJANA TÖNSMEYER (eds.): *Vom Vorrücken des Staates in die Fläche: Ein europäisches Phänomen des langen 19. Jahrhunderts*, Köln et al. 2016, pp. 179-197; ESA RUUSKANEN: *Valuing Peatlands and Wetlands: Mires in Natural Resource and Land Use Policies in Sweden and Finland from the 18th Century to the Present Day*, in: GORDON WINTER, ANDREAS DIX (eds.): *Trading Environments: Frontiers, Commercial Knowledge and Environmental Transformation, 1820-1990*, New York 2016, pp. 118-136. State-driven land reclamation efforts contin-

often referred to the experience of other countries in order to present the Western Expedition as part of a pan-European move towards rural modernization. Presumably much to their delight, survey engineer General Iosif I. Zhilinskii, who acted as the head of the Western Expedition<sup>5</sup>, was awarded a gold medal for his drainage plan at the 1878 World Exhibition in Paris.<sup>6</sup> Wetland drainage thus also served as a signifier of Russia's power to bring progress and civilizational advance even to the most challenging environments.

The Western Expedition made considerable changes to the physical landscape in Polesia. Within a period of 25 years, around 2.5 million hectares of land were drained, over 500 bridges were built and more than four thousand kilometers of canals were constructed, connecting substantial areas of forest to important water transportation routes.<sup>7</sup> The government officially suspended the Western Expedition in 1902, turning wetland drainage, which had hitherto been carried out by specially commissioned expeditions<sup>8</sup>, into a permanent responsibility of the Ministry of Agriculture and State Domains (from 1905 the Chief Administration for Land Organization and Agriculture).<sup>9</sup> Up until the end of the imperial period, the Ministry's Department for Land Improvement oversaw numerous drainage works across the central and western provinces of the Russian Empire.<sup>10</sup> While this institutional

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ued well into the twentieth century. See LIESBETH VAN DE GRIFT: *Cultivating Land and People: Internal Colonization in Interwar Europe*, in: EADEM, AMALIA RIBI FORCLAZ (eds.): *Governing the Rural in Interwar Europe*, New York 2017, pp. 68-92.

<sup>5</sup> Zhilinskii (1834-1916), also known as Józef Żyliński and Iosif Zhilinsky, was an officer of Polish origin who served in the Corps of Military Topographers after completing his studies in the geodesic department of the General Staff Academy in St. Petersburg in 1858. See SEEGEL (as in footnote 3), pp. 236-237.

<sup>6</sup> *Exposition Universelle Internationale de 1878 à Paris: Catalogue officiel. Liste des récompenses*, Paris 1878, p. 373.

<sup>7</sup> NIKOLAY BAMBALOV, NINA TANOVITSKAYA, ALEXANDER KOZULIN, VYACHESLAV RAKOVICH: *Belarus*, in: HANS JOOSTEN, FRANZISKA TANNEBERGER et al. (eds.): *Swamps and Peatlands of Europe: Status, Distribution and Conservation*, Stuttgart 2017, pp. 288-298, here p. 293. See also B. S. MASLOV et al.: *Istoriia melioratsii v Rossii* [History of Land Reclamation in Russia], vol. 1, Moskva 2002, pp. 302-311.

<sup>8</sup> Apart from the Western Expedition, there was also a Northern Expedition, which carried out exploration and drainage works around Saint Petersburg, Novgorod, Pskov, Olonets, Vologda, and in the Baltic provinces from 1875 onwards. See on this I. AVGUSTINOVICH: *Kratkii obzor bolot i ikh osusheniia na severe Rossii i deiatel'nost' severnoi ekspeditsii po issledovaniiu bolot i osusheniia bolot za desiatiletie (s 1875 po 1884 god)* [Short Overview of the Swamps and Their Drainage in Northern Russia and of the Activities of the Northern Expedition for the Exploration and Drainage of Marshlands, 1875-1884], Sankt-Peterburg 1885.

<sup>9</sup> *Ob izmenenii poriadka proizvodstva osushitel'nykh, orositel'nykh i obvodnitel'nykh rabot v Evropeiskoi Rossii* [On the Changed Regulations Regarding Drainage, Irrigation and Water Management Measures in European Russia] (1902-06-03), in: *Polnoe sobranie zakonov Rossiiskoi Imperii: Sobranie tretie 22 (1902)* [1904], pp. 540-542.

<sup>10</sup> For some official reports, see N. MUROMTSEV: *Gidrotekhnicheskie izyskaniia i raboty, ispolnennye chinami Otdela Zemel'nykh Uluchshenii v Evropeiskoi Rossii v 1911*

change caused a sharp decline in the financial resources spent on land reclamation in Polesia, it also indicated that, in the early twentieth century, wetland drainage had become a regular element of the imperial state's efforts to govern its rural regions.

Underpinning the idea to drain Polesia's marshlands were broader concerns about the organization of the imperial territory and the development of peripheral regions. In the late nineteenth century, Russia's educated elites became increasingly preoccupied with the expansion and penetration of the empire's space and the aspiration to culturally 'uplift' its population.<sup>11</sup> Other than Siberia and Central Asia, which were in the center of the ambiguous contemporary colonization discourse, Polesia was not envisaged as a destination of Russian settler colonialism.<sup>12</sup> The region's predominantly Belarusian inhabitants were treated as Russians by Tsarist administrators. Reflecting the increasingly powerful discourse of peasant "backwardness,"<sup>13</sup> they were described according to the parameters of a civilizing mission that targeted the peasant majority of European Russia as well as non-Russian populations in borderlands. For instance, an official publication from the mid-nineteenth

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godu [Hydrotechnical Explorations and Measures, Carried out by the Department for Land Improvement in 1911], in: *Ezhegodnik Otdela Zemel'nykh Ulushchenii 1911, Sankt-Peterburg 1913*, pp. 23-107; IDEM: *Gidrotekhnicheskie raboty v tseliakh rasshirenii i uluchsheniia proizvoditel'noi ploshchadi i pri zemleustroistve [Hydrotechnical Works for the Expansion and Improvement of the Productive Area and for Land Reclamation Purposes]*, in: *Ezhegodnik Otdela Zemel'nykh Ulushchenii 1912, Sankt-Peterburg 1913*, pp. 25-163; IDEM: *Gidrotekhnicheskie raboty v Evropeiskoi Rossii v tseliakh rasshirenii i uluchsheniia proizvoditel'noi ploshchadi [Hydrotechnical Works in European Russia for the Expansion and Improvement of the Productive Area]*, in: *Ezhegodnik Otdela Zemel'nykh Ulushchenii 1913, Sankt-Peterburg 1914*, pp. 51-149.

<sup>11</sup> MARK BASSIN: Turner, Solov'ev, and the "Frontier Hypothesis": The Nationalist Signification of Open Spaces, in: *Journal of Modern History* 65 (1993), 3, pp. 473-511; ALBERTO MASOERO: Territorial Colonization in Late Imperial Russia: Stages in the Development of a Concept, in: *Kritika: Exploration in Russian and Eurasian History* 14 (2013), 1, pp. 59-91; WILLARD SUNDERLAND: The "Colonization Question": Visions of Colonization in Late Imperial Russia, in: *Jahrbücher für Geschichte Osteuropas* 48 (2000), 2, pp. 210-232. ALEXANDER ETKIND: *Internal Colonization: Russia's Imperial Experience*, Cambridge 2011, uses the concept of internal colonization as an analytical category to describe how the Tsarist state established control over people and land in frontier regions and in the inner parts of the empire.

<sup>12</sup> On borderland colonization in the Russian Empire and the Soviet Union, see NICHOLAS B. BREYFOGLE, ABBY SCHADER et al. (eds.): *Peopling the Russian Periphery: Borderland Colonization in Eurasian History*, London—New York 2007; ALEXANDER MORRISON: Russian Settler Colonialism, in: EDWARD CAVANAGH, LORENZO VERACINI (eds.): *The Routledge Handbook of the History of Settler Colonialism*, Abingdon 2017, pp. 313-326.

<sup>13</sup> YANNI KOTSONIS: *Making Peasants Backward: Agricultural Cooperatives and the Agrarian Question in Russia, 1861-1914*, New York 1999.

century referred to the Polesian population as “half-wild”<sup>14</sup> due to their remoteness from urban life. The attempt to transform Polesia’s environment was informed by these intertwined visions of spatial integration and rural development and reflected the central administration’s broader strategy to increase the contribution of the empire’s regions and their respective populations (Russian and non-Russian) to the larger imperial economy.<sup>15</sup>

Building on recent scholarship, which has demonstrated how environmental perspectives can enhance our understanding of the Russian imperial project<sup>16</sup>, this article argues that the alteration of local environments was a means by which the Tsarist government sought to penetrate and consolidate the imperial territory. I suggest to situate the Western Expedition within the context of modern territorialization, the strive to extend control over national or imperial territories through administrative, infrastructural and economic means, which Charles Maier identifies as a core feature of statehood between the late nineteenth century and the 1970s.<sup>17</sup> I contend that territorialization, whether pursued by empires or nation states, has to be understood as a multi-layered process that includes an ecological dimension along with its economic, political and social aspects. At the same time, the Western Expedition exemplifies

<sup>14</sup> I. ZELENSKII (ed.): *Materialy dlia geografii i statistiki Rossii, sobrannye ofitserami general’nogo shtaba: Minskaia Guberniia, chast’ 1* [Materials on the Geography and Statistics of Russia, Collected by the Officers of the General Staff: Province of Minsk, Part 1], Sankt-Peterburg 1864, p. 257.

<sup>15</sup> This aspiration also informed the increasing attempts to map the economic features of the Russian Empire’s different regions. See on this NAILYA TAGIROVA: *Mapping the Empire’s Economic Regions from the Nineteenth to the Early Twentieth Century*, in: JANE BURBANK, ANATOLYI REMNEV (eds.): *Russian Empire: Space, People, Power, 1700-1930*, Bloomington 2007, pp. 125-138.

<sup>16</sup> See the pioneering research on the agricultural colonization of the steppes by DAVID MOON: *The Plough that Broke the Steppes: Agriculture and Environment on Russia’s Grasslands, 1700-1914*, Oxford 2013. An excellent overview of the newest research in this field is NICHOLAS B. BREYFOGLE (ed.): *Eurasian Environments: Nature and Ecology in Imperial Russian and Soviet History*, Pittsburgh/PA 2018. On the role of imperial experts and state agencies in transforming and protecting the environment, see MAYA K. PETERSON: *Engineering Empire: Russian and Foreign Hydraulic Experts in Central Asia, 1887-1917*, in: *Cahiers du Monde Russe* 57 (2016), 1, pp. 125-146, and STEPHEN BRAIN: *In Single File: Russian Railroads and the Russian Army as Environmental Protection Agencies, 1858-1917*, *ibidem*, pp. 173-190.

<sup>17</sup> CHARLES S. MAIER: *Consigning the Twentieth Century to History: Alternative Narratives for the Modern Era*, in: *The American Historical Review* 105 (2000), 3, pp. 807-831. Jörg Ganzenmüller and Tatjana Tönsmeier suggest that the efforts of central governments to penetrate their territories, for example by expanding state bureaucracies or by initiating infrastructural projects to tap resources and raise the general well-being of the population, were a “structural phenomenon” in nineteenth-century Europe. JÖRG GANZENMÜLLER, TATJANA TÖNSMEYER: *Einleitung. Vom Vorrücken des Staates in die Fläche: Ein europäisches Phänomen des langen 19. Jahrhunderts*, in: *IDEM, Vom Vorrücken* (as in footnote 4), pp. 7-31.



Fig. 1: Hidrograficheskaia karta Poles'ia [Hydrographic Map of Polesia], in: Atlas po ocherku (as in footnote 2)

how useful it can be to consider empires as “ecosystem engineers,” which make far-reaching changes to the natural environment for the sake of political and economic power.<sup>18</sup> In Polesia, three different factors influenced the intertwined processes of territorialization and ecosystem-engineering: the increasing interest of the Tsarist government in developing the countryside; the role of the state as an owner of land that was interested in making these lands profitable; and a widespread disregard of wetlands, which were seen as economically useless features of the non-human environment. Together, these factors opened up a new paradigm in the relationship between state and nature that would persist until the late Soviet period: Large-scale environmental engineering became deeply woven into the state’s attempts to establish control over its territories. Ecological change was not a side-effect of the central government’s territorialization efforts, but an actively employed means to promote spatial cohesion.

<sup>18</sup> KATHLEEN D. MORRISON: Empires as Ecosystem Engineers: Toward a Nonbinary Political Ecology, in: *Journal of Anthropological Archeology* (2018), 52, pp. 196-203.

## Drained Wetlands as a Public Good

When the Western Expedition started in 1873, wetland drainage was not a new subject for the elites of the empire. Since the release of the nobility from obligatory state service in the middle of the eighteenth century, scientific publications had repeatedly reported on landowners' attempts to make their estates more profitable by altering the ecological features of marshland. In the late nineteenth century, wetland drainage was increasingly seen as a greater goal that transcended the needs of individuals and therefore required state support.<sup>19</sup> This new approach mirrored the rising importance of the idea of the public domain within the Russian Empire which, as Ekaterina Pravilova shows, had far-reaching implications for the imaginations, rhetoric, and practices relating to the governance of the empire's natural wealth.<sup>20</sup> Moreover, the allocation of considerable resources to the exploration and drainage of wetlands in Polesia reflected the increasing importance of the rural economy within the Tsarist administration, after the end of serfdom had changed the place of the countryside within the empire's social and economic fabric.<sup>21</sup>

The "Materials on the Geography and Statistics of Russia," a multi-volume publication from 1864 written under the supervision of the army general I. Zelenskii, was among the first official publications to present the wetlands of Polesia as a matter of state concern. The authors stated that wetlands were harmful for the health of the population and obstructed the development of forestry, farming and infrastructure. As local landowners had been largely unsuccessful in improving their land, it seemed unlikely that more ambitious reclamation plans could be realized, at least in the near future. Draining Polesia's marshlands, the authors believed, was an "almost unattainable dream" (*mechta, edva-li osushchestvimaia*). However, their skepticism did not relate to the question of whether large-scale drainage operations were technologically feasible or ecologically desirable, but to the enormous costs that the region would not be able to afford without governmental support.<sup>22</sup> A few years later, the tone had become more optimistic. In 1872, a commission set up under the Minister of State Domains Petr A. Valuev to assess the state of the empire's agriculture demanded a more active role for the government in land melioration. According to the members of the commission, Russia was not able to make use of her natural wealth, as standing waters impeded the economy in the northern and western regions and the south lacked proper irrigation schemes. While cooperation of local land owners was indeed essential for the

<sup>19</sup> KATJA BRUISCH: Nature Mistaken: Resource-Making, Emotions and the Transformation of Peatlands in the Russian Empire and the Soviet Union, in: Environment and History (2018), <https://doi.org/10.3197/096734018X15254461646567>.

<sup>20</sup> EKATERINA PRAVILOVA: A Public Empire: Property and the Quest for the Common Good in Imperial Russia, Princeton 2014.

<sup>21</sup> GEORGE YANEY: The Urge to Mobilize: Agrarian Reform in Russia, 1861-1930, Urbana 1982.

<sup>22</sup> ZELENSKII (as in footnote 14), pp. 95-97, 256-293.

economic appropriation of marshy areas, only comprehensive state investments would create the necessary impetus for coherent land improvement.<sup>23</sup> The commission's widely acknowledged report marked the beginning of a new phase in the relationship between state and nature in the Russian Empire. Ecosystem engineering now became increasingly accepted as a policy instrument that complemented fiscal, educational and economic measures to boost the rural economy.

Echoing the findings of Valuev's commission, contemporaries presented changes in local water regimes as a means to promote the public good. Press articles and official records about the Western Expedition claimed that the central government and the population of Polesia shared a common interest in changing the natural environment in the region. The anticipated benefits from the drainage operations would therefore transcend narrow individual or institutional interests. In late 1873, an article "The Swamps of Russia" published in the liberal journal *Vestnik Evropy* claimed enthusiastically that every single rouble invested in draining Polesia's wetlands would serve the country as a whole. Expected outcomes included increased returns from meadows, forests and farmland as well as improved health and sanitary conditions. Moreover, as moves to introduce universal military service were afoot<sup>24</sup>, the prospect of improving public health was presented as a particularly important argument in favor of the Western Expedition. Stressing that the health of recruits from the region tended to be below average, the article implied that land drainage would increase not only the economic, but also the military potential of the Russian Empire.<sup>25</sup> Looking back at his career in 1908, Zhilinskii highlighted the importance of hydraulic melioration "from the perspective of state and society's interests" (*s tochki zreniia gosudarstvennykh i obshchestvennykh interesov*) and their ability to serve the "common good" (*obshchaia pol'za*). The engineer argued that the state should generously fund land improvement measures, as private actors often lacked the necessary financial and technological means. For him, there was no doubt that humans could surmount the constraints arising from what contemporaries saw as either the "overabundance" or the "lack" of water.<sup>26</sup>

Reflecting the growing importance of the public good in the empire's political and legal discourse, local interest in drainage often served to justify the

<sup>23</sup> Doklad vysochaishe uchrezhdennoi kommissii dlia issledovaniia nyneshniago polozheniia sel'skogo khoziaistva i sel'skoi proizvoditel'nosti v Rossii [Report of the Commission for the Investigation of the Current State of Agriculture and Rural Productivity in Russia], Sankt-Peterburg 1873, pp. 37-41. On the commission, see YANEY (as in footnote 21), pp. 36-44.

<sup>24</sup> Universal military service was introduced shortly after, in 1874.

<sup>25</sup> Bolota Rossii [The Swamps of Russia], in: *Vestnik Evropy* 8 (1873), 12, pp. 754-772.

<sup>26</sup> I. I. ZHILINSKII: Sel'skokhoziaistvennye gidrotekhnicheskie raboty (Usloviia i zadachi sel'skokhoziaistvennoi gidrotekhniki v Rossii) [Agricultural Hydro-engineering Works (Conditions and Objectives of Agricultural Hydraulic Works in Russia)], Sankt-Peterburg 1908, p. 20.



economic and ecological changes that the Western Expedition brought about. A report on the expedition published by the Ministry of Agriculture and State Domains in 1879 claimed that drainage measures in Polesia responded to “the most vital needs of the region” (*samye nasushchnye i zhiznennye potrebnosti kraia*), where space for livestock grazing did not suffice and haymaking on marshy meadows was difficult and dangerous. Highlighting the peasants’ “enthusiasm” (*vostorg*) when they discovered that melioration allowed them to mow grass in previously impenetrable areas, the publication evoked the idea of different social and institutional actors uniting around a common interest in wetland drainage.<sup>27</sup> There seems to have been more to this than just the government’s wish to ensure public support for the expedition. For example, the 1877 report of the governor of Minsk mentioned that, as part of the drainage operations carried out between lake Zhid’ and the Pripiat river in the district of Slutsk, twelve canals had been built upon the explicit request and in part with the financial means of noble and peasant landowners.<sup>28</sup> Pointing out that willing to invest money and labor numerous people had asked that their land be included in the drainage activities, the comprehensive account of the campaign from 1899 similarly stressed the broad local endorsement and thus the larger public benefit of the Western Expedition.<sup>29</sup>

However, even though official reports portrayed the drainage operations as a means of spatial and societal integration, at times the Western Expedition had quite a disruptive effect at the local level. In promoting wetland drainage, the Tsarist government articulated an idea of rational land-use which centered around the monetary income that a certain plot of land generated. Market-oriented forestry and farming were therefore clearly preferred to common local habits, such as fishing, berry picking or animal husbandry for subsistence. Zhilinskii, for example, highlighted the “negligible” (*nichtozhnyi*) revenue from undrained marshes in comparison to the economic benefits from reclaimed lands, thus making money a major argument in favor of hydraulic melioration.<sup>30</sup> Consequently, established usage patterns of undrained wetlands had low priority in the planning of the drainage activities. In his report from 1899, the head of the expedition mentioned that in some places the canals had to be protected from local people and animals, who apparently did not adapt

<sup>27</sup> Osushenie bolot [Drainage of the Swamps], in: Ministerstvo gosudarstvennykh imushchestv: Sbornik svedenii zemledeliia i sel’skoi promyshlennosti po departamentu, Sankt-Peterburg 1879, pp. 79-133, here p. 129.

<sup>28</sup> Prilozhenie k otchetu gubernatora (1877) [Attachment to the Report of the Governor (1877)], in: Rossiiskii Gosudarstvennyi Istoricheskii Archiv, Sankt Peterburg (RGIA) [Russian State Historical Archive], f[ond] 1263, o[pis]’ 1, d[elo] 3972, l[istok] 144-159.

<sup>29</sup> I. I. ZHILINSKII: Ocherk rabot zapadnoi ekspeditsii po osusheniiu bolot (1873-1898) [Report on the Western Expedition for the Drainage of Marshlands (1873-1898)], Sankt-Peterburg 1899, pp. 465-471, 490.

<sup>30</sup> ZHILINSKII, Sel’skokhoziaistvennye (as in footnote 26), p. 2.

their land and water use practices to the new infrastructure, so that canals got polluted or their walls damaged.<sup>31</sup>

The damage of the newly built drainage system points to the fact that the canals, which were initially imagined, and indeed served, as a medium of connection, were a factor of fragmentation at the same time. Constituting new transportation routes for timber producers, they sometimes cut through tracks between villages and pastures or split up plots of land that had previously formed an integrated space. As a result, the construction and repair of roads and particularly bridges over the canals became a contentious issue between central and local actors. In 1900, a police officer approached the administration of the Western Expedition, because the peasants in his district refused to cover the maintenance costs of a bridge which had been built by the Western Expedition.<sup>32</sup> The Ministry of Agriculture and State Domains, where the Western Expedition was formally affiliated, regularly sought to avoid such expenses. In one instance, the officials argued that the repair works for a couple of bridges in the Volynia province should be financed by the local population, as in this case the Western Expedition had not built new, but just replaced existing bridges.<sup>33</sup> These examples illustrate that there was no guarantee that the local population would univocally embrace the reconfiguration of their local environment and take over the responsibility for the new infrastructure. At times, the Western Expedition generated tensions between central and local interests, because the new drainage infrastructure created not only economic opportunities, but also long-term financial burdens.

Since much of the land that was affected by the drainage campaign was in private hands, the Western Expedition required that the demarcation between private rights and public needs be renegotiated. Official records prove that private property rights were repeatedly subordinated to the purpose of wetland drainage. In a number of cases, mill-dams were removed or mills relocated during the construction of canals after the state had obtained the local water rights from their private owners. In other instances, the expedition commissioned the construction of sluices on privately owned territory, followed by the state's acquisition of the right to open these to float timber.<sup>34</sup> Within the Russian Empire, such involvement of the state in the regulation of property was nothing exceptional. In fact, the Western Expedition mirrored a longer process by which control over natural assets was increasingly seen as a responsibility or duty to serve the public good. This idea rendered the expropriation of private property legitimate, provided that the state could convincingly claim to be following greater objectives and would grant compensa-

<sup>31</sup> IDEM, *Ocherk rabot* (as in footnote 29), p. 442.

<sup>32</sup> *Delo o sostoianii kanalov i drugikh sooruzhenii* [On the State of Canals and Other Facilities] (1900), in: RGIA, f. 424, op. 1, d. 270, l. 3.

<sup>33</sup> *Ibidem*, ll. 19, 22, 24.

<sup>34</sup> ZHILINSKII, *Ocherk rabot* (as in footnote 29), pp. 466-470, 504.

tion.<sup>35</sup> Ironically, for private owners this constellation could prove even advantageous, as, knowing that the success of ambitious projects such as wetland drainage or railway construction depended on their cooperation, they could sometimes successfully insist on high compensation payments from the state.<sup>36</sup>

Still, local interest in land melioration was more than simply official rhetoric. An increasing amount of educational literature about the agricultural use of drained wetlands, or “mire cultivation” (*kul'tura bolot*), suggests that by the early twentieth century wetland drainage had become a concern that transcended the narrow circle of governmental officials and scientists.<sup>37</sup> A Russian edition of a manual on mire cultivation published by the Austrian chemist and agricultural scientist Wilhelm Bersch was in such demand that it had to be reprinted after a first edition had quickly sold out in 1913.<sup>38</sup> Moreover, in the late imperial period, wetland reclamation was increasingly being promoted at the local level, most notably by the organs of local self-government (*zemstva*).<sup>39</sup> A report on mire cultivation courses given to peasants in the Minsk province suggests that many of them endorsed wetland drainage as an economic opportunity.<sup>40</sup> Evidently the state's initial impulse continued to have an effect

<sup>35</sup> PRAVILOVA (as in footnote 20), p. 3. On the expropriation of land, see pp. 97-101.

<sup>36</sup> *Ibidem*, p. 105.

<sup>37</sup> K. NOTGAFT: *Osushenie i kul'tura bolot* [Drainage and Mire Cultivation], Sankt-Peterburg 1875; V. V. USOV: *Kul'tura bolot: Ikh osushenie, lugovodstvo i polevoe khoziaistvo na nikh* [Swamp Cultivation: Drainage, Grassland Cultivation and Farming on Drained Land], Sankt-Peterburg 1911; B. V. KAZACHENKO: *Iz praktiki po kul'ture bolot: Doklad chitannii v Grodnenskom Agronomicheskom Soveshchanii* [From the Practice of Swamp Cultivation: Report Presented at the Agronomical Convention in Grodno], Sankt-Peterburg 1914. This literature drew upon an international trend towards the cultivation of drained wetlands. See on this RUUSKANEN, *Valuing Wetlands and Peatlands* (as in footnote 4), p. 124; IDEM: *The Emergence of Baltic Moorkultur: Visions of Scientific-technological Mastery of Peatlands in the Age of Great Social Change, 1850-1914*, in: *History and Technology* (2019), pp. 213-234.

<sup>38</sup> *Rukovodstvo po kul'ture bolot* B. Bersha. *Perevod s nemetskago* [Manual on Swamp Cultivation], 2nd ed., Petrograd 1914, p. III. The original had appeared as WILHELM BERSCH: *Handbuch der Moorkultur: Für Landwirte, Kulturtechniker und Studierende*, Wien 1909. The first Russian edition was published in 1912.

<sup>39</sup> While *zemstva* had been established in the central parts of the empire in 1864, they appeared in the Western provinces only in 1911. THEODORE R. WEEKS: *Nation and State in Late Imperial Russia: Nationalism and Russification on the Western Frontier, 1863-1914*, DeKalb 2008, pp. 148-151.

<sup>40</sup> A. A. SEDLETSKII: *Otchet o kursakh po kul'ture bolot i lugovodstvu v d. Slobode, Borisovskago uezda, Minskoi gubernii v 1913 godu* [Report on the Courses on Swamp and Meadow Cultivation in the Village of Sloboda, Borisov District, Province of Minsk], Minsk 1913.

at the local level, where the population felt that they benefited directly from the changes in their immediate natural environment.<sup>41</sup>

### The Central State between Profitability and Paternalism

While the notion of the public good figured prominently in official records and journalistic accounts of the Western Expedition, a closer examination of the planning, calculation, and implementation of the drainage works reveals that an important motive behind the ambitious campaign was the desire to increase governmental revenue. In the post-emancipation period, the increasing state debt, mainly due to the maintenance of a large army and costly military ventures such as the Crimean War, led the government to search for new sources of income. Even though most of the government's revenues at the time came from taxes, this context was important for Zhilinskii's campaign, as wetland drainage promised to increase the profitability of some large state-owned estates in Polesia.<sup>42</sup> The distribution of "improved" land across different categories of landholders reflects the interest in the economic performance of these domains and a growing awareness of state finances among the ruling elites. Thus, the treasury owned around half of all the areas drained by the Western Expedition, another 40 per cent belonged to members of the landed gentry (*pomeshchiki*), while less than ten per cent counted as peasant land.<sup>43</sup>

Against this background, it is not surprising that the monetary flows generated from drained land played a major role in official assessments of the Western Expedition. In places, Zhilinskii's report from 1899 reads like the balance sheet of a private enterprise, with earnings and expenses carefully weighed against each other. The report mentioned that by 1897 a total amount of 4,7806,609 roubles and 14 kopeks had been spent on canal construction, meteorological investigations, land surveying, and on the salaries of engineers and technicians. The figures presented the drainage of Polesia as a profitable endeavor, which generated new sources of revenue for the treasury. Most important among these were the expansion of forestry, the introduction of canal tolls for the floating of timber, and the leasing of drained state-owned land to the local peasants. According to Zhilinskii's calculations, the capital invested by the government received a return of seven per cent on state domains.<sup>44</sup> His micro-economic approach to evaluate the success of the Western Expedition

<sup>41</sup> TÖNSMEYER/GANZENMÜLLER, *Einleitung* (as in footnote 4), p. 12, argue that the success of modern states in gaining control over their territories often depended on the "local demand" for the norms that states sought to establish.

<sup>42</sup> On the revenue sources of the Tsarist state, see PETER WALDRON: *Governing Tsarist Russia*, New York 2007, pp. 165-176.

<sup>43</sup> MASLOV (as in footnote 7), pp. 307-308. These numbers also include the areas in central Russia, to which the Western Expedition was expanded in 1876.

<sup>44</sup> ZHILINSKII, *Ocherk rabot* (as in footnote 29), pp. 586-587, 592.

reflected not only the government's interest in increasing the financial revenues from state-owned land, but also a more encompassing trend towards the commodification of nature in the Russian Empire. By defining the value of Polesia's drained wetlands in abstract economic terms, official reports presented these ecosystems as a commodity whose value was, at least in part, defined by markets and not by their ecological properties.

Timber market dynamics in particular impacted on the layout and perception of the Western Expedition. As industrialization put pressure on the empire's forest reserves in the late nineteenth century, political and intellectual elites expressed concerns about deforestation and rising timber prices.<sup>45</sup> Drainage could improve the ecological conditions for forestry, where high water tables impeded the growth of trees. Forest melioration therefore seemed to be a lucrative way to turn the strained situation on the timber markets into a source of income for forest owners. Reflecting this logic, high priority was given to state-owned estates with large forest areas, such as the Vasilevka domain in the district of Homel', where drainage works started soon after the launch of the Western Expedition. In order to lower the water level in the domain's forests, the Vedrich River was widened and straightened for a length of 20 kilometers in 1874. For the same purpose, a network of over 60 kilometers of drainage canals was dug, followed by further canal construction works in subsequent years.<sup>46</sup> Indeed, forestry benefitted from the extension of drainage canals in Polesia. Twenty years after the beginning of the Western Expedition, Zhilinskii reported accelerated growth in birch and pine trees on drained land. Moreover, he highlighted the improved connection of the region to larger transport networks, which allowed local timber produce (mostly pine) to be transported as far as to the Baltic and Black Sea ports.<sup>47</sup>

The financial arrangements concerning the construction and usage of canals were no less indicative of the state's dual role in Polesia. Zhilinskii's master plan made a distinction between magisterial (*magistral'nye*) canals that affected larger areas and smaller side (*bokovye*) canals. The expenses of digging and maintaining the various types of canals were divided among a number of stakeholders. Thus, while the government funded the construction of arterial canals, private land owners were expected to contribute to the costs associated with the building of lower ranking canals.<sup>48</sup> The regulations about the exploitation of the emerging canal infrastructure similarly reflected the notion of the expedition as a "public-private partnership," in which private money complemented the initial investments by the state. Thus, while timber from state domains could generally be shipped free of charge, timber from

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<sup>45</sup> On the "Forest Question," see PRAVILOVA (as in footnote 20), pp. 60-69; JANE T. COSTLOW: *Hart-Pine Russia: Walking and Writing the Nineteenth-Century Forest*, Ithaca 2012, pp. 81-115.

<sup>46</sup> *Osushenie bolot* (as in footnote 27), pp. 83-84.

<sup>47</sup> ZHILINSKII, *Ocherk rabot* (as in footnote 29), pp. 562-568.

<sup>48</sup> *Osushenie bolot* (as in footnote 27), p. 85.

private land holdings incurred levies for the use of canals (*splavnye bilet'y*), unless timber producers had paid for their construction themselves.<sup>49</sup> Between 1878 and 1898, the state's income from canal tolls in Polesia increased from 240 to 18,586 rubles.<sup>50</sup> While total revenues from canal tolls remained rather small, as most private timber producers paid towards canal construction works, the arrangement reflected the two connected goals of regional development and income generation on state-owned lands that stood behind the Western Expedition. This, in turn, had complex implications on the ground. Positively discriminating in favor of the state's produce over that of private producers, the canal network did not constitute a truly public good that was non-excludable in use. In fact, it was more reminiscent of what economists call a "club good," a quasi-public good that can be utilized once users fulfill certain conditions, such as paying a toll.

While being presented as a means to foster the rural economy for the benefit of the local population, the conversion of wetlands into meadows and farmland created new hierarchies of land use as well. Ironically, assigning market value to Polesia's natural environment meant that additional government revenues from drained land derived from payments by the local peasantry whose needs, according to the rhetoric of the public good, the drainage campaign was meant to serve. Once the Western Expedition had drained a state-owned piece of land, this plot was usually divided into smaller parcels and leased to local peasants who needed additional hay land. The Vasilevka domain, which in 1873 had made 155 roubles from leasing land to peasants, received 2,537 roubles for 856 desiatins of reclaimed meadows four years later.<sup>51</sup> Yet, while offering drained land to the local population allowed state domains to increase their monetary income quite substantially, peasants found themselves in an ambiguous position. As the monetary value of drained land tended to increase quickly, renting additional land soon turned into an economic burden for them. In fact, rental obligations often exceeded the financial abilities of the peasants (*arendovanie [...] stanovilos' ne pod silu odnomu krest'ianinu*). Therefore, even though the state generated additional income from the local demand for meadows, leasing rates had soon to be adjusted to the solvency of the peasants. From 1884, the allocation of state land leased to local peasants was organized through auctions (*torgi*) to keep lease payments below certain levels.<sup>52</sup> The state's strategy thus oscillated between exploiting and constraining the land market upon which some of the positive financial effects of wetland drainage actually depended.

<sup>49</sup> ZHILINSKII, Sel'skokhoziaistvennye (as in footnote 26), p. 42; IDEM, Ocherk rabot (as in footnote 29), p. 562.

<sup>50</sup> IDEM, Ocherk rabot (as in footnote 29), pp. 577-580.

<sup>51</sup> Osushenie bolot (as in footnote 27), pp. 100-101.

<sup>52</sup> ZHILINSKII, Ocherk rabot (as in footnote 29), pp. 519-521. For the quotation, see p. 519.

The introduction of crop cultures is another telling example of the government's "private" interests, and their simultaneous commitment to larger "public" aims in Polesia. Zhilinskii's report stated that grain or vegetable cultivation on drained land did not generate a high enough income and was therefore not to be pursued on state domains. Instead, experiments were carried out to promote agriculture and horticulture among the local population. Mirroring a larger move towards the spreading of scientific knowledge among the empire's rural population, the leaders of the Western Expedition commissioned an agronomist to familiarize peasants with the agricultural colonization of drained land. On the territory of the Vasilevka state domain, several pieces of land with different ecological characteristics were designated for the cultivation of vegetables such as beets, cabbage, and cucumbers, as well as for rye and various summer grains. In line with the contemporary discourse about peasant backwardness, Zhilinskii stated in his report that these experiments had "followed an exclusively educative goal (*vospitatel'naia tsel'*): It was necessary to demonstrate to the Polesian peasant the means and approaches to prepare the bogs for tillage and vegetable gardening."<sup>53</sup> After peasants in the region began maintaining their own vegetable plots, the experimental fields of the domain were transformed into hay meadows.<sup>54</sup> This example demonstrates how both financial motivations and a paternalistic attitude towards the local population shaped the activities of the Western Expedition. While, as a landowner, the state did not have any economic interest in using drained land for crop farming, such practices were actively promoted among the peasantry.

Assessing the financial dimension of the drainage works reveals the central government's complex interests in Polesia. The official documentation proves that monetary considerations played a central role in the planning and the design of the drainage activities. The fact that in this context market values served as the most important measure to assess the outcomes of the Western Expedition suggests that a larger trend towards the commodification of nature, particularly forests, was ongoing in the late Russian Empire. In fact, forestry had been one of the sectors where the concept of "profit" had been employed in its modern sense already early in the nineteenth century. The Western Expedition was thus embedded in a longer tradition to perceive forests as a commodity.<sup>55</sup> The case of the expedition also reveals the growing importance of the central state in the governance of rural regions. By making investments in the local infrastructure, the Tsarist government adopted wetland drainage as a policy measure for rural development. Yet, the introduction of fees for the use of canals and drained wetlands turned the solvency of

<sup>53</sup> Ibidem, pp. 551-558. For the quotation, see p. 551.

<sup>54</sup> Ibidem.

<sup>55</sup> ELENA KORCHMINA: Conceptualising the Notion of "Profit" among the Russian Nobility (Second Half of the 18th—First Half of the 19th Centuries), in: *Quaestio Rossica* 6 (2018), 4, pp. 1144-1159, <https://doi.org/10.15826/qr.2018.4.351>.

peasants and entrepreneurs into a requirement for gaining access to an allegedly public good. By adopting these restrictions, the state acted in the same way as a private landowner interested in maximizing economic returns from their land. Both sets of practices combined with stereotypical ideas about the local peasants whose interest in drained land was depicted as an expression of their “exclusively domestic aims” (*iskliuchitel’no dlia domashnego obikhoda*).<sup>56</sup> In the context of the Western Expedition, thus, financial interest and paternalism complemented each other in serving the state’s larger aim of extending control over rural regions and of extracting economic value from them through ambitious ecosystem engineering.<sup>57</sup>

### Facing an Unknown Environment

When the Tsarist government launched the Western Expedition in 1873, little was known about the ecological features of Polesia’s wetlands. Scientists and state officials in the Russian Empire generally agreed upon the economic uselessness of marshlands, equating their drainage with prospects for regional development and the advance of civilization.<sup>58</sup> However, almost immediately after the Western Expedition had taken up the reclamation works, an intense controversy evolved about the possibly harmful effects of wetland drainage on local and remote environments. The discussion, which involved some of the empire’s leading scientists, was closely tied to the agendas of various central institutions. The Ministries of State Domains and of Transportation were particularly keen on backing their institutional interests with scientific facts. The Western Expedition therefore also constituted an important chapter in the history of scientific expertise in the Tsarist administration.

The key question was whether the drainage of wetlands would affect the water levels of large rivers, which up until the late nineteenth century were the most important transportation routes in the Russian Empire. The debate unfolding after the launch of the Western Expedition followed up on a similar controversy a few decades before, when scientists and state officials had argued about the impact of intensive forestry on the navigability of relevant waterways.<sup>59</sup> The notion that different parts of the natural world were inter-

<sup>56</sup> ZHILINSKII, *Ocherk rabot* (as in footnote 29), p. 519.

<sup>57</sup> As MASOERO (as in footnote 11), pp. 82-83, shows in relation to the late imperial colonization discourse, contemporaries believed that state property of land was an advantage for colonizing and modernizing projects, as it allowed such ambitions to be realized without the need to consider individual or communal land titles.

<sup>58</sup> BRUISCH (as in footnote 19).

<sup>59</sup> M. V. LOSKUTOVA: “Vliianie lesov na obmelenie rek est’ tol’ko nedokazannaia ipoteza”: *Prikladnaia nauka i gosudarstvennaia politika po upravleniiu lesnym khoziaistvom Rossiiskoi imperii vtoroi chetverti XIX v* [“The Impact of Forests on the Shallowing of Rivers is just an Unproven Hypothesis”: Applied Science and State Forestry in the



dependent and that human interference with the environment could potentially lead to uncontrollable results figured prominently among the critics of the state's drainage campaign in Polesia. Vasilii V. Dokuchaev, the doyen of Russian soil sciences who would later become famous for his research on the origins of the Black Soil, warned in 1874 that Polesia was still a "terra incognita for geology."<sup>60</sup> The drainage of the Pripiat marshes might therefore have unintended outcomes. The scientist was less concerned about the wetland ecosystems as such, than about their crucial function in the regulation of water levels in riverine environments, for example by reducing the risk of flooding during high water seasons. Dokuchaev's reservation about the Western Expedition stemmed from his conviction that marshlands served as water reservoirs for some of the most important rivers in the Russian Empire, such as the Volga and the Dnieper. Any drainage plans would be premature, unless clear evidence could be provided that these rivers received their waters also from other sources. In light of costly wetland protection and rewetting programs in present-day Belarus<sup>61</sup>, Dokuchaev's warnings appear almost prophetic: "Before spending millions on the drainage of marshland, it is essential to prove that the rivers, which have their sources in peatlands, can also exist without these. Otherwise, we will have to invest even more money and labor into rewetting drained swamps."<sup>62</sup>

A serious drought which hit the southern parts of the Russian Empire in the early 1890s increased concerns about the potentially problematic consequences of intensive wetland drainage. In 1894, following reports about falling river water levels, most importantly along the Dnieper, the Ministry of Transportation set up an expedition to investigate the upper sections of some navigable streams to assess the possible risks of wetland drainage. Headed by geodesist and cartographer Aleksei A. Tillo, like Zhilinskii a high-ranking member of the Tsarist Army, the expedition urged that drainage works be carried out with maximum caution. This advice was based on the findings of the geographer and geologist Sergei N. Nikitin, whose exploration of the Dnieper's upper drainage basin had shown that feeder streams were much more relevant for the river than formerly suggested. Any interference in the hydrology of these smaller watercourses could therefore have fatal repercussions on the Dnieper river system as a whole. Considering the conversion

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Russian Empire in the Early Nineteenth Century], in: *Istoriko-biologicheskie issledovaniia* 4 (2012), 1, pp. 9-32.

<sup>60</sup> V. V. DOKUCHAEV: *Po voprosu ob osushenii bolot voobshche i v chastnosti ob osushenii Polesia* [On the Question of the Drainage of Swamps in General and in Polesia in Particular], Sankt-Peterburg 1874, p. 38.

<sup>61</sup> See for example the ongoing project "Polesia—Europe's largest wilderness area. Wetland protection in the south of Belarus and in the north of Ukraine," led by the Frankfurt Zoological Society, URL: <https://fzs.org/en/projects/polesia-europes-largest-wilderness-area/> (2019-01-15).

<sup>62</sup> DOKUCHAEV (as in footnote 60), p. 20.

of large areas of swamps into farmland to be economically pointless and ecologically hazardous, the scientist demanded that drainage activities be limited to a small number of raised bogs, which were unimportant for the Dnieper. Wetlands located close to important feeders, however, should be left intact. Nikitin also concluded that the siltation of the Dnieper had not been caused by deforestation (forests were widely believed to be crucial to the water levels of rivers) or by large-scale drainage activities, but by the expansion of farmland. Referring to “nature herself” (*sama priroda*), Nikitin suggested that in order to “maintain the natural order of things” (*poderzhanie estestvennogo poriadka veshchei*), the state should promote forestry and, where possible, animal husbandry, while preventing the local population from ploughing up river banks and wetlands.<sup>63</sup> Although relating to the most northern sections of the Dnieper, Nikitin’s report held important implications for Polesia as well. As the ongoing drainage and river straightening works affected many tributaries of the Pripiat, Berezina, and Vedrich rivers (all themselves tributaries of the Dnieper), Nikitin’s analysis suggested that such interventions into the region’s wetland ecosystems could have unpredictable repercussions on the ecology of the larger Dnieper river system.

The leading representatives of the Western Expedition were less skeptical. In his voluminous report of 1899, Zhilinskii stressed the “groundlessness (*neobosnovannost’*) of any fears that drainage works caused the shallowing of rivers.”<sup>64</sup> He quoted extensively from a statement that the economist, geographer, climatologist and high-ranking member of the Academy of Sciences Konstantin S. Veselovskii had addressed to the Ministry of Agriculture and State Domains in support of the drainage works in Polesia. Veselovskii was convinced that, if the rivers in the south were indeed subject to shallowing, this did not result from the activities of the Western Expedition. In fact, wetland drainage constituted one of the few possibilities for humans to improve the local climate and to make wetlands economically useful. The drainage activities should therefore be extended and accelerated.<sup>65</sup> Apart from highlighting the opinions of established scientific authorities, the members of the Western Expedition engaged in scientific explorations themselves. Convinced that any successful drainage operation depended on a sound understanding of

<sup>63</sup> Trudy ekspeditsii dlia issledovaniia istochnikov glavneishikh rek Evropeiskoi Rossii: Bassein Dnepra. Issledovaniia gidrogeologicheskogo otdela 1894 g. Pod rukovodstvom Nachal’nika Otdela S. N. Nikitina [Proceedings of the Expedition for the Exploration of the Sources of the Most Important Rivers in European Russia: The Dnieper Basin. Explorations of the Department of Hydrogeology], Sankt-Peterburg 1896, pp. III-IX, 156-161; for the quotations, see pp. 157, 160.

<sup>64</sup> ZHILINSKII, Ocherk rabot (as in footnote 29), p. 602. Zhilinskii’s position contrasted with that of DOKUCHAEV (as in footnote 60), p. 44, who had expressed this concern soon after the expedition’s launch.

<sup>65</sup> ZHILINSKII, Ocherk rabot (as in footnote 29), pp. 602-607. For the original see Perepiska 1899 roda po raznym predmetam [Correspondence on Various Matters from the Year 1899], in: RGIA, f. 424, op. 1, d. 250, ll. 3-9.

the wetlands' origins, they tried to establish the causes behind the high levels of paludification in Polesia. Zhilinskii's position in this regard was almost diametrically opposed to Dokuchaev's and Nikitin's observations. While these had stated that swamps were important feeders of rivers, Zhilinskii claimed that marshlands actually *received* water from rivers. The low gradient of Polesia's streams played a central role in his theory. He noted that, when rivers burst their banks during periods of heavy rainfall or high tides, the water drained away very slowly, creating large areas of wetlands.<sup>66</sup> Zhilinskii's position was supported by the botanist and soil scientist Gavriil I. Tanfil'ev, a member of the Western Expedition, who had identified the flatness of the landscape as one of the major reasons for the large areas of wetlands in Polesia. Tanfil'ev believed that their drainage would very likely have a positive effect on the growth of trees. Moreover, as the geology of the region only allowed for a limited reduction in regional water levels through drainage canals, the Western Expedition would barely have a significant impact on the Pripiat and Dnieper river systems.<sup>67</sup>

The debate illustrates how cultural values and economic interests shaped contemporary perceptions of wetland ecosystems. The critics of the Western Expedition anticipated the now widely accepted idea that different parts of nature are interconnected and that wetlands fulfill multiple functions for their larger environment. The fact that wetland drainage leads to biodiversity loss and releases greenhouse gasses obviously did not play a role in their discussions, as these concepts had not yet been scientifically established. Contemporary reservations about the drainage operations therefore related less to Polesia's marshlands as valuable ecosystems that deserved protection than to the harm which their disappearance might do to other, more culturally and economically valuable parts of the natural environment. Zhilinskii and his colleagues correctly identified low river gradients and aquifers close to the soil surface as major reasons behind the occurrence of wetlands in Polesia.<sup>68</sup> In the long run the decision about how to approach these landscapes was not a scientific, but a political one. The imperial, and later the Soviet, government's wish to incorporate the region into larger economic and administrative structures, and to raise Polesia's contribution to the national economy, overrode ecological concerns, for whatever reasons these were expressed.

### Conclusion: The Western Expedition as a Paradigmatic Case

The Western Expedition soon transcended its initial mandate to promote wetland drainage in Polesia. Within a few years after the expedition had been launched, drainage became widely acknowledged as a major condition for

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<sup>66</sup> ZHILINSKII, *Ocherk rabot* (as in footnote 29), p. 28.

<sup>67</sup> TANFIL'EV (as in footnote 2), pp. 3-5, 40-43.

<sup>68</sup> BAMBALOV/TANOVIISKAYA/KOZULIN/RAKOVICH (as in footnote 7), p. 292.

economic development in central Russia as well. Worried about low forest productivity, the governor of Riazan' suggested in 1875 that his province be included into the government's land improvement efforts.<sup>69</sup> The following year, the Western Expedition started exploration and drainage works in the provinces of Vladimir, Moscow, Ryazan and Tver.<sup>70</sup> As in the region of its initial activity, the expedition focused on measures to develop forestry, particularly on landholdings that were owned by the state. While Zhilinskii's report celebrated the accelerated growth of trees in central Russia due to the campaign<sup>71</sup>, the drainage operations caused similar conflicts between local and central interests as in Polesia, as they sometimes interrupted established land and water use-practices.<sup>72</sup>

Apart from being extended from the imperial borderland to the Russian heartland, Zhilinskii's campaign also marked the beginning of the state's growing involvement in large-scale melioration efforts more generally. In 1880, the Ministry of State Domains set up the Expedition for the Irrigation of the Russian South. Reflecting the administration's increasing appreciation of Zhilinskii's expertise, the engineer was first put in charge of overseeing the irrigation works in the steppe regions and appointed head of the Department of Land Improvement in the Ministry of Agriculture in 1894.<sup>73</sup> His career hints at the significance of the Western Expedition within a broader history of the relationship between the state and the natural environment in modern Russia: The drainage campaign in Polesia provided a blueprint for large-scale interventions in the natural environment, which the Tsarist government promoted for the sake of economic development and the cohesion of the imperial space. In this regard, the Russian Empire was by no means different from other European Empires: remodeling the non-human world was a fundamental feature of imperial rule.<sup>74</sup>

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<sup>69</sup> Osushenie bolot (as in footnote 27), pp. 119-120.

<sup>70</sup> MASLOV (as in footnote 7), p. 302.

<sup>71</sup> ZHILINSKII, Ocherk rabot (as in footnote 29), pp. 617-654.

<sup>72</sup> Thus, in 1900, the Ministry of Agriculture received a request from the region of Vladimir about the construction of five bridges over drainage canals, after the local forester had complained that some of the canals had cut off peasants' access to grazing or haymaking meadows that they were leasing from a state domain: O sostoianii mostov, vodospuskov v Moskovskoi, Tverskoi, Riazanskoi gub. 1900 g. [On the State of Bridges and Floodgates in the Provinces of Moscow, Tver' and Riazan'], in: RGIA, f. 424, op. 1, d. 271, ll. 6-7.

<sup>73</sup> MOON (as in footnote 16), p. 209; PRAVILOVA (as in footnote 20), p. 104; ZHILINSKII, Sel'skokhoziaistvennye (as in footnote 26), pp. 11-12. On Zhilinskii's career, see: Zhilinskii, Iosif Ipolitovich, in N. A. AFANAS'EV: *Sovremenniki: Al'bom biografii*, Sankt-Peterburg 1909, pp. 45-47.

<sup>74</sup> COREY ROSS: *Ecology and Power in the Age of Empire: Europe and the Transformation of the Tropical World*, Oxford 2017.

Not only did the drainage canals, bridges, roads, reclaimed meadows and straightened rivers alter the outlook of the physical landscape in Polesia, they also changed the representation of the region within the geographical discourse of the Russian Empire. In the mid-19th century, Polesia had been described as a “wild and dead” region (*glukhoi i mertvyi kraï*), where large swamp areas “tired one’s eyes” and fields and meadows occupied only a “negligible area” (*nichtozhnoe prostranstvo*).<sup>75</sup> The state-led drainage activities significantly transformed the reputation of the region. Featuring hay ricks that stretch to the horizon, an image from Zhilinskii’s account presents Polesia as a successfully reclaimed area that provided the material sources for animal husbandry (figure 2). Soon after the publication of this report, Veniamin P. Semenev-T’ian-Shanskii, Petr P. Semenov and Vladimir I. Lamanskii included this picture in the ninth volume of their “Russia: A Full Geographical Description of Our Fatherland,” proving how effectively the drainage campaign shaped the imagination of a broader public (figure 3).<sup>76</sup> Even the artistic representation of Polesia seems to have been influenced by the Western Expedition. Ivan Shishkin’s “Polesian landscape,” dated 1884, does not evoke the impression of untamed nature. Similar to the image in the expedition’s official report, hay ricks prominently placed at the center of the painting evoke the impression of a well-designed cultural landscape bound to human needs (figure 4).<sup>77</sup>

The Western Expedition exceeded its intended scope not only in a geographical, but also in a temporal sense, by opening an era in which the central state routinely used environmental engineering to enhance control over, and to modernize, rural peripheries. Even though drainage works in Polesia decreased after the expedition’s official end, the belief in the benefits of large-scale melioration schemes lived on. In response to an initiative by the governor of Minsk, land melioration measures were revived shortly before the First World War.<sup>78</sup> The Soviet government continuously promoted the transformation and appropriation of Polesia’s marshlands, albeit at various levels

<sup>75</sup> ZELENSKII (as in footnote 14), pp. 96, 258.

<sup>76</sup> V. P. SEMENOV, V. V. SEMENOV et al. (eds.): *Rossiiia: Polnoe geograficheskoe opisanie nashogo otechestva: Nastol’naia i dorozhnaia kniga dlia russkikh liudei. Tom 9: Verkhnee Podneprov’e i Belorussiiia* [Russia: Full Geographical Description of Our Fatherland. Manual for Russian People. Vol. 9: Upper Dnieper Basin and Belarus], Sankt-Peterburg 1905, p. 11.

<sup>77</sup> However, it would be misleading to associate Shishkin’s art with Promethean visions of radical nature transformation. His 1890 “Marsh in Polesie” featured a wetland idyll, in which plants and animals lived in harmony.

<sup>78</sup> E. V. OPPOKOV: *K vozobnovleniiu krupnykh osushitel’nykh rabot v Poles’e* [On the Resumption of Large-Scale Drainage Works in Polesia], in: *Ezhegodnik Otdela Zemel’nykh Ulushchenii* 1911, Sankt-Peterburg 1913, pp. 134-145.



Fig. 2: Dacha Vasilevicheskaia, Minsk province, published in ZHILINSKII, Oчерк ra-  
bot (as in footnote 29), no pag.



Fig. 3: Look of Polesia, published in SEMENOV/SEMENOV (as in footnote 76), p. 11



Fig. 4: Ivan Shishkin, Polesian Landscape (1884)

of intensity. The state planning committee, Gosplan, developed ambitious land melioration programs for Soviet Belarus already during the 1920s.<sup>79</sup> Iosif Stalin and Nikita Khrushchev both expressed aspirations to drain the region's wetlands, yet these only partially materialized. The most far-reaching interventions in the region's landscape took place during Leonid Brezhnev's tenure, when investments in land melioration reached unprecedented levels with large and long-lasting impacts on the region's environment.<sup>80</sup> Although Soviet experts refrained from openly referring to the historical experience of the Russian Empire, their ideas about the ecological transformation and economic exploitation of wetlands clearly originated in the work of late imperial hydraulic engineers. The drainage activities of the Western Expedition are symptomatic of a new paradigm in the relationship between state and nature that manifested itself in a number of ambitious state-driven attempts to change the ecological properties of the country's lands and endured until the

<sup>79</sup> Perspektivnyi desiatiletinii plan meliorativnykh rabot na territorii Belarusskoi SSR na 1924-1933 gody [Ten-Year Perspective Plan of Land Melioration Works in the Belarusian Soviet Republic 1924-1933], in: Rossiiskii Gosudarstvennyi Arkhiv Ekonomiki (RGAE) [Russian State Archive of the Economy], f. 4372, op. 10, d. 200, ll. 4-5.

<sup>80</sup> BAMBALOV/TANOVITSKAYA/KOZULIN/RAKOVICH (as in footnote 7), pp. 293-294. See also ARTEM KOUIDA: Land Melioration in Belarusian Polesia as a Modernization Factor in the Soviet Periphery, in this issue.

late twentieth century.<sup>81</sup> From the late imperial until the late Soviet period, territorialization and ecosystem engineering were closely intertwined.<sup>82</sup>

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<sup>81</sup> These included, among others, Stalin's Great Plan for the Transformation of Nature, Khrushchev's Virgin Lands Campaign and the large-scale irrigation schemes to promote cotton farming in Central Asia.

<sup>82</sup> The significance of the Imperial Russian and the Soviet state in promoting the "developmentalist project" and the implications of this for the non-human world are also highlighted in DOUGLAS WEINER, JOHN BROOK: Conclusions: Nature, Empire, Intelligentsia, in: BREYFOGLE (as in footnote 16), pp. 298-315.