

András Vadas

The Environmental Legacy of War on the Hungarian-Ottoman Frontier, c. 1540–1690

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‘Against the plundering of the Turks, the Rába is a safeguard but bigger protection is watching.’ p. 47

In this first monograph to systematically examine the environmental history of the Ottoman-Hungarian frontier, András Vadas challenges conventional narratives about ecological devastation during the early modern period. He poses two seemingly simple questions: how did nearly 150 years of intermittent warfare alter the landscapes of the Carpathian Basin, and how did the opposing armies use the environment in their military strategies? By focusing on the Rába River valley in western Hungary (Transdanubia), Vadas shows that the most profound environmental legacy of war was not the frequently criticised Ottoman deforestation, but rather the deliberate and consequential manipulation of water. Drawing on an extraordinary wealth of previously unexplored private letters, river surveys and administrative records from the Batthyány family archives, the book will appeal to environmental historians, military historians of pre-modern Europe and scholars of the Ottoman Empire. It is also a model for how to reconstruct pre-modern landscapes from fragmentary documentary evidence.

Vadas organises his argument in five chapters framed by a substantial introduction and conclusion. He describes the political geography of the sixteenth and seventeenth-century Carpathian Basin, which is divided into three parts: Habsburg Hungary, the Ottoman-occupied central lowlands and the semi-independent Principality of Transylvania. He does this by placing the study within the environmental history of war (based on Joseph Hupy’s threefold typology of war-related disturbance). The waterscape of Transdanubia is the focus of Chapter 2, which makes the case that, starting in the 1540s, rivers like the Sava, Dráva and particularly the Rába became essential components of Hungary’s military defence. Using an impressive river study commissioned by Tamás Néasdy in 1543–1544, Vadas shows how Habsburg designers methodically assessed fords, dams, gallery forests and even the distance of trees from the riverside in order to obstruct Ottoman crossings.

Chapter 3 focuses on the town of Gómend and its manorial complex, and analyses over 3,000 private letters to demonstrate how the militarisation of the Rába, through intentional damming, ‘river cutting’ (bevágás) and maintaining artificially high water levels, significantly changed the river’s flood regime. As a result, local peasant populations suffered severely financially due to an annual cycle of catastrophic floods that damaged crops, bridges and mills. Chapter 4 moves to the question of forests. Contrary to conventional wisdom, Vadas estimates that the hundreds of earth-and-wood fortifications along the

frontier consumed relatively modest amounts of timber: perhaps 12.5 square kilometres of managed woodland over 150 years, while household firewood use and water-mill construction were far more significant drivers of forest management. This conclusion reaffirms that hydrological change, not deforestation, was the war's most lasting environmental footprint.

Vadas's use of sources is innovative, but the book's argumentative structure has several limitations. First, the focus on western Transdanubia, especially the Rába valley around Körmend, is so intense that the reader is left wondering about representativeness. Vadas himself notes that the Great Hungarian Plain had a different hydrography and a much sparser fortification network, yet he does not offer a parallel case-study from the lowlands under Ottoman authority. Kecskemét and Debrecen are mentioned in passing in the chapter on woods, but not in sufficient detail to counterbalance the in-depth discussion of Rémond. In the absence of a comparable Ottoman-side case (such as an settlement along the Dráva or Tisza) it is unclear if the hydrological manipulation mentioned was a specific Habsburg-Hungarian tactic or a more widespread frontier phenomena.

Second, Vadas repeatedly dismisses climatic factors, especially the Little Ice Age, as explanations for increased flooding, arguing that reconstructed precipitation and temperature trends do not align with the flood peaks at Körmend. Yet his own data (Figure 3.10) show that the most severe floods occurred in the 1640s and 1650s, which coincide with known phases of Alpine glacier advance and cooler, wetter summers in central Europe. While he is right to caution against monocausal climate determinism, his rejection of any significant climatic contribution seems too categorical. A more nuanced position, acknowledging that a militarised river regime made the landscape exceptionally vulnerable to even modest climatic variations, would have bolstered the argument.

Third, the book's engagement with Ottoman sources and perspectives is asymmetrical. Vadas uses Ottoman tax registers (*defterler*) for demographic data, and he cites Gábor Ágoston's work on Ottoman frontier policies, but the reader never learns how Ottoman military engineers perceived the Rába or whether they attempted their own hydrological counter-measures. The 1594 Hungarian survey mentions that the Ottomans used the right bank for cover, but we have no equivalent Ottoman document about the river's manipulation. This imbalance is partly a function of archival survival, but it also means that the book's central claim – that the Hungarians not the Ottomans were the primary agents of environmental transformation – rests on a one-sided evidentiary base. A single chapter examining an Ottoman-controlled stretch of the Dráva or Mura using Ottoman administrative records would have made the comparison more robust.

Despite these shortcomings, *The Environmental Legacy of War* is a landmark study. Its most important contribution is methodological: Vadas

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demonstrates that private estate correspondence which is often dismissed as limited can be mined for systematic environmental data. The letters from Körmend and Csákány allow him to reconstruct not only flood frequencies but also the seasonality of repairs, the types of timber used, the labour demands on peasant communities, and even the political tensions between military captains and estate provisors. This level of detail is uncommon in pre-modern environmental history. Moreover, the book successfully overturns the enduring trope of Ottoman-induced deforestation, showing that woodlands were managed rather than destroyed, and that water, not wood, was the critical resource.

For scholars of early modern frontiers, Vadas offers a compelling model of how to study ‘militarised landscapes’, zones where defence needs overrode local economic rationality. The end of this work, which traces the post-1699 abandonment of earth-and-wood fortifications and the beginning of systematic river regulation, also paves the way for comparative work with other long-lasting frontier zones, such as the Spanish *presidios* in North America or the Russian *abatís* lines. Future research might ask whether similar hydrological manipulations occurred on the Ottoman side of other frontiers (e.g., along the Danube in present-day Serbia) or how the environmental memory of these wars shaped nineteenth-century water management projects. Vadas has given us a rich, revisionist account that will be essential reading for anyone interested in war, landscape and the forgotten power of flowing water.

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