Kényszer vagy lehetőség? A nagykunsági települések ártéri gazdálkodása a 18. századi újratelepüléstől az átfogó folyószabályozások megindulásáig [Necessity or opportunity? Floodplain farming in the settlements of the Nagykunság from the eighteenth-century resettlement to the beginning of comprehensive river regulation]. By Sándor Rózsa. Budapest–Eger: HUN-REN Bölcsészettudományi Kutatóközpont Történettudományi Intézet – Eszterházy Károly Katolikus Egyetem, 2025. 274 pp.

In the early decades of the twenty-first century, concerns about the environment are part of everyday life. Weather anomalies, climate anxiety, and climate change denial have turned many people into amateur climatologists. In this daily discursive environment, there is renewed interest in the climatic conditions of the past and the historical relationships between landscape and people. The human world of the past is often imagined as ideal and in harmony with the natural world, which is, allegedly, in stark contrast to the present, perceived as disconnected from nature. A return to the conditions of this romanticized past often appears as a solution to the present crises.

One such issue in the Hungarian public discourse is the sustainability of the modern lowland ecological system that was developed as a result of land melioration works. While earlier water regulation was praised as a masterpiece of engineering and was considered useful and cost-effective, the emergence of increasingly pressing systemic problems challenged this view after recurring floods in Hungary in the 1990s. While everyday influencers often know less about the world before river regulation, they often nonetheless voice strong opinions and offer solutions based on knowledge of the circumstances of the past, such as historical landscape reconstruction, water retention, and the idea of a return to floodplain management as means of addressing the problems of floods and global warming at the same time.

As Rózsa points out, with the exception of research from the last decade, historical works on the subject have been characterized by two extremes. On the one hand, the process was celebrated as the "second conquest of the homeland" and approached from the perspective of water management history in cubic meters of dryland claimed, riverbends cut off, and square kilometers drained. This is contrasted, on the other hand, with a harmonious, ecologically sustainable view of humanity living in harmony with the landscape. The latter view is rooted primarily in historical ethnographic research and popularized by

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environmental movements. Rózsa investigates which of these perspectives is founded on scientific evidence.

In the history of river regulation in Hungary, the period up to the mid-nineteenth century can be called the period of local flood control, while the period following the symbolic year of 1846 can be described as the century of systemic, general river regulation, which lasted until the middle of the twentieth century. Rózsa limits his study to the first phase. In terms of sources, this so-called pre-statistical era is characterized primarily by scarcity and fragmentation. Two "land use breaking points" frame the period as external historical events that fundamentally influenced the relationship between humans and the environment: the demographic catastrophe at the end of the wars with the Ottoman empire in the first half of the eighteenth century and the beginning of large-scale river regulation in the middle of the nineteenth century. During this period, it is possible to investigate whether the start of local water management in the area under study was motivated by some internal constraint, such as an agricultural crisis caused by overpopulation or climatic anomalies, or by an opportunity, for instance the need to switch to more profitable forms of farming. In the center of the work lies a specific event: the construction of the so-called Mirhó dam in the Nagykunság region, which is interpreted in this framework.

First, however, we must clarify a fundamental question: what was the significance of this particular dam in Hungary at the end of the eighteenth century, and what was the function of dams in general in the country? The history of water management in eighteenth-century Hungary has only rarely been studied, and while numerous works have dealt with local water management projects, including the Mirhó dam itself, no modern nationwide survey of these landscape-altering projects has been produced. Based on the map sheets of the first military survey, Rózsa systematically identifies 169 embankments (517 km in total length) and 203 canals (692 km in total length) built by the end of the eighteenth century. Although the scale of these works was significantly smaller (10 percent smaller) than that of the interventions carried out during the river regulation era after 1846, their volume and length were still nine times greater than previously assumed by the existing literature. This finding naturally reduces the national significance of the Mirhó dam, as it was only the sixty-fifth in length among the 169 flood protection embankments.

This dam nevertheless had unique characteristics (it is worth noting that a substantial part of this dam still exists, although it no longer functions as an independent flood-control dam). It was one of the most significant dams

in terms of its hydrological effects, despite the fact that it lagged far behind the larger constructions in terms of "cubic meters moved". Its construction history is well documented in the sources of the Nagykun district. The Nagykun market towns (oppida) were inhabited by free-peasant communities who enjoyed collective privileges and were not subject to manorial authority. They were thus able to act with a considerable degree of autonomy. As no manorial structure was imposed on free peasants, the unknown extent and output of allodial (manorial) estates does not need to be taken into account. Rózsa therefore considers the cadastral survey conducted at the end of the eighteenth century to be a reference point in economic history. By reference point, he means a date at which the socioeconomic features of the district can be reconstructed using exact (quantitative) methods and used as a basis for statistical comparison with later periods. He has a very clear opinion on this issue, and he devotes an entire chapter to explaining why he considers the statistical use of data from 1700 to 1780 or even from 1828 problematic. Rózsa believes that the most important reason for the inaccuracies is that the eighteenth century records on arable crop production did not refer to the actual size of the cultivated area, but to the amount of grain sown.

In contrast, the three sources from the reign of Joseph II (the first official census, the cadastral survey with its maps and data, and the maps of the first military survey) can be meaningfully compared with one another and with the statistical data from the second half of the nineteenth century. In order to use the data from a survey, it is necessary not only to find the source, but also to be familiar with the different instructions related to the various surveys and censuses, as one can only accurately interpret the answers given to the various questions if one understands these instructions. Unfortunately, the national summary data of the first cadastral survey, which began in 1786, are not available. In 1960, Zoltán Dávid identified 259 settlements the censuses for which have been preserved in the Archives of the Lieutenant's Council. Rózsa subsequently located records for another 24 settlements in the archives of Heves County and Jász-Nagykun-Szolnok County covering the area of the whole Nagykun region, which is more than 2000 square kilometers. Thus, the fundamental limitation of his preferred reference point is the absence of a nationwide body of data collected in a single place. However, his success in uncovering sources thought to be lost still nurtures the hope that parts of the cadastral survey have survived and may still be found in local county archives.

Historical maps are another important source on which Rózsa has drawn extensively, and he discovered and georeferenced these maps himself. With the help of this procedure, the various maps can be compared with one another with greater certainty. Rózsa makes extremely important source-critical comments on the map sheets of the first military survey regarding the accuracy of land use and the categories applied. He was able to compare two maps in the case of the Karcag border. One was the map from the first military survey, and the other was a copy of the work by geodesist György Kovács. Based on a comparison of the maps, he makes several critical observations: the military survey offers only something of a "snapshot" and thus is not suitable for the study of the movements of floods within a year. It depicts the floodplain environment in a rough manner, and it does not enable one to distinguish between wet and dry meadows and pastures. In the case of arable land, it depicts the area that can be potentially cultivated rather than the area that was actually cultivated or sown. The military survey is therefore, in the strict sense, not suitable for a quantitative analysis of either land use or economic production. Researchers who use it without these critical considerations in mind may thus arrive at misleading conclusions with regard to the extent of floods and floodplains and also with regard to the area of land actually cultivated by the population and the yield-per-hectare values.

Rózsa makes extensive use of GIS to solve historical problems, including the one outlined above. Another good example of this is the model and calculations he uses to determine how much the construction and restoration of the Mirhó dam constituted a burden for the peasant community. In doing so, he aims to highlight and test two contradicting assumptions in the secondary literature. The first of these assumptions is that, before the mid-nineteenth century, the resources for transformations in land use were available but the will to do so was lacking (Bertalan Andrásfalvy). The second is that, in the absence of these resources, the work could not have begun before the mid-nineteenth century (András Deák). To decide the question, Rózsa collected the available archival sources, determined the number of public work days available, and calculated the number of work days actually used for construction (which was probably greatly overestimated). He then conducted a site visit and, with the help of old and new map material, he created a digital historical model of the dam and calculated the amount of earth used or moved in its construction. As a result of his investigation, he concluded that the community had ample public labor available and that the work did not represent an unbearable burden for them. In

fact, if the real number of working days used was indeed the same as that reported in the sources, then the work performance of the dam builders at the end of the eighteenth century was much lower than that of their nineteenth-century counterparts. Given that the toolkit did not change much over the one hundred years that had passed, this suggests either a much lower level of motivation or a very generous calculation of working hours in the original documents. This finding strongly supports Bertalan Andrásfalvy's contention that, at least in the case of the Nagykunság, the eighteenth-century population had the potential to transform the landscape but lacked the will to do so.

Another important question is whether the local agricultural overpopulation described by Klára Dóka and the resulting need to switch to dry farming (arable grain production) to ensure food supplies for the population led to the construction of the dam whether some other motivation was there. Rózsa uses statistical sources to refute the thesis of agricultural overpopulation, and he even assumes that there was a significant surplus of grain production (exceeding human consumption demands), in addition to the great output from husbandry. His data is consistent with the findings of Zsolt Pinke, another significant scholar in the field. There thus appears to have been little competition for land between husbandry and grain production in the region at the time. The Mirhó dam was therefore not necessary as a means of creating more land for dry farming but was rather a way of ensuring the yield of pastures, which were the basis of animal husbandry. Its purpose was not to protect against floods, but rather to eliminate the harmful effects of excessive flooding on animal husbandry by cutting off the open water system from the Tisza River on both sides, from the Tisza via the Mirhó "fok" (a small artificial riverbed that was used a means of popular floodplain management) and from the south from the direction of the Hortobágy. The goal was therefore not flood prevention but flood control. The dam was associated with extremely complex social and institutional conflicts of interest that extended beyond the settlements of Nagykun District, also affecting Heves and Külső-Szolnok Counties, as well as the estates of the Orczy barons and the bishop of Eger. The stances of those involved in the conflicts were influenced by weather conditions (alternating dry and wet periods) and their hydrogeographic location. The geographically fixed but climatically dynamic situation influenced the varying attitudes of communities towards the issue of the Mirhó dam across space and time, leading them at different moments to support either its construction or its demolition. Internal social conditions within local communities also influenced the outcome, particularly the differing

interests of the *redemptus* (free landowners) and *irredemptus* (landless free persons often living from husbandry) populations of the district.

This thought leads us to the last important question: the classification of Rózsa's work from the perspective of its scientific discipline. Rózsa himself sees his research as belonging to two possible overlapping disciplines: historical ecology and environmental history (as he explains in the introductory chapter). However, instead of contrasting these approaches, he argues that they overlap and indeed are perhaps synonymous. Historical ecology simply refers to the primacy of the historical approach, while environmental history refers to the primacy of the natural science approach. Although he is cautious about his own classification, his text suggests that he finds environmental history more appealing.

Sándor Rózsa's work is indeed characterized by the predominance of the natural scientific point of view (GIS-aided and statistical analysis of historical sources). He offers extremely thorough analyses, for example, of the technical details of dam construction, the possibilities of digitizing maps, and the interpretation of various "patches," referring to indications of different forms of land use on maps. He devotes less attention to letters of complaint, council minutes, and the fates and concerns of individual characters in the story. Rózsa does not go into detail regarding the activities of political actors. This attitude suggests that the emphasis is on natural phenomena and technical measures rather than on social problems or analyses of conflicts or competing interests.

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