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Duress or prospect?
Examination of floodplain farming of settlements of Nagykunság from the resettlement in the 18th century to the beginning of the comprehensive river regulation

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The farming system in the six settlements of Nagykunság /Karcag, Kisújszállás, Kunhegyes, Túrkeve, Kunmadaras,Kunszentmárton / from the beginning of 18th century until the middle of 19th century is examined in the dissertation. The period begins with returning of the inhabitants who fled from the Turkish wars and end with the beginning of the comprehensive river regulation in the Tisza valley. The history of water management in the Carpathian Basin is a prominent topic as the river regulations introduced in the middle of the 19th century had a significant impact on the landscape of the Great Plain and also had significant economic and social effects. Bertalan Andrásfalvy's theory about the floodplain management has evoked a relatively large debate among the researchers on the topic. According to the main thesis of his theory farmers living along the river before the river regulations were coexisting with the rhytmically arriving floods and even tried to use the floods. As he says this system was relatively economical and it also gave the opportunity to get involved in agricultural trade.This system was abolished by the river regulations imposed on the producing communities from the outside. This theory evoked controversy since it was not possible to be proved with certainty that the farmers maintained the system consciously or just lived with the flood of necessity. Some researchers doubted that what Andrásfalvy observed in Sárköz on the Danube could be generalised, for example, along the Tisza.

During the research, the main objective was to examine the farming system in the Nagykun District using the methods of quantitative historiography. My hypothesis is that the previous assumption, made by the researchers, according to which the construction of the Mirhó dam in the area and the farmers emigration to Báská at the same time are a sign of crisis in flood plain management, is not entirely correct. The construction of the dam caused a dispute among the farmers of the surrounding settlements and the emigration to Báská was initially hindered by the councils of the settlements , while later several emigrants wanted to move back to Nagykunság. If farming in the settlements was in crisis, why it took more than ten years to build the dam, what reasons hindered the construction? Why was the emigration of the poorer farmers initially prevented? Why did the poorer classes want to move back later? My assumption was that a study in which agricultural sustainability, population density, etc. examined with quantitative statistical tools will explain a lot of contradictions.

Based on several aspects, my dissertation belongs to the scope of environmental history. One of the basic theses of environmental history is that humans are part of the ecosystem and their activities trigger complex processes in the system of complex ecosystem. The farming of the inhabitans in the area was influenced by many factors: the carrying capacity of the area, the land ownership system, market conditions, external state influences and environmental changes / climate changes, fluctuations in

the magnitude of floods/ were not independent from people's activities. Based on these aspects, floodplain management in the settlements of Nagykunság was examined in my study. Interdisciplinarity is another connection with environmental history , so the results and characteristic types of sources from several fields of science have been used. The changes of the landscape were reconstructured using modern GIS methods. For example Digital terrain models were also used, which made it possible to calculate how much earth was incorporated during construction of the Mirhó dam.

One of the significant difficulties of the research was the unfavourable source data of the 18th century and of the first half of the 19th century. I tried to examine the uncovered sources as far as it is possible in a critical way, thereby joining Joachim Radkau's theory according to which one of the main competencies of a historian specialist whithin interdisciplinary environmental history is knowledge of sources. I tried to uncover sources that can be used in quantative studies and are also suitable for creating agricultural statistical indicators that are used during investigation of later ages.

It is an advantageous circumstance that the formation of resources was more favourable in the Nagykun District than in the surrounding counties, thanks to its specific self-government system and the autonomy of management and legal services. Special attention was

given to the sources created during the reign of Joseph 2nd, such as the military survey, the cadastral one, and the first Hungarian census, which together made it possible in-depth analysis. The first cadastral survey, which received little attention so far was considered especially valuable during the source Basedcritical studies.

According to my research, a farming system adapted to floods was established in the Nagykun District at the beginning of the 18th century. Active water management was not typical here, but farmers were aware of the advantages of the floodplain environment, for example, the higher biomass production of floodplain pastures. The construction of the Mirho dam at the end of the 18th century did not mean the end of floodplain farming. The construction of the dam resulted mainly in the shrinking of the swamps and not in the growth of the arable fields, that is, the proportion of completely waterless areas did not increase significantly. The fact that the farmers of the area did not even intend to increase these lands is well proven by the thing that after the construction of the dam there were no further significant earthworks until the middle of the 19th century. Comparing the estimated workforce required for the construction of the dam with the assumed workforce capacity of the entire population it was shown that the population would probably have been able to carry out additional work. Based on the documents used, it seems that the state pressure was not too significant either. In the 18th century Nagykunság, the

autonomy of the community in terms of landscape use was relatively high.

Another important result of the investigation of dam constructions is that floodplain farming was exposed to climate change. Its system worked in a normal way when the floods came regularly and were of average height and duration. Too much water in the system caused some disturbance, just as much as too little, especially due to the fact that compared with the first half of the century, the population's needs were greater, and the livestock was also larger. The purpose of building the Mirho Dam was to control the flood, not to prevent it completely. The floodplain basin was not completely drained, only the water, coming from the Tisza from the north was diverted, and floods still came from the Hortobágy-Berettyó floodplain from the south until the middle of the 19th century.

Examination of sources related to farming showed that there was no significant agricultural overpopulation in the area. At the end of the 18th century, compared with other areas of the country, even sufficient arable land was available here, and in addition to the internal grain needs, the farmers were also able to engage in the grain trade. However, I agree with Tibor Bellon's theory that animal husbandry was dominant in the area until the second half of the 19th century. The size of the arable land was relatively favourable but there were years when just enough grain was produced for the population. The system had to be sized up so that in years with average

and poor harvests too, the grain should be sufficient at least for the population's own needs. If the population's needs were satisfied in the best years, the system would be undersized. The examination of the quantitative change in arable land showed that the great increase took place in the second half of the 19th century, that is, in connection with the grain boom starting in the middle of the 19th century and the comprehensive river regulations. The population was able to take advantage of the grain boom at the turn of the 18-19th century even without flood relief, as far as the transport options of the time allowed it.

In my dissertation, I tried to create a picture as precisely as it is possible of the floodplain farming in Nagykunság from the beginning of the 18th century, aiming it will be an important element of the more global picture of traditional floodplain farming in Carpathian Basin, and on the other hand I think, it will provide an opportunity to put the subsequent flood relief efforts in a more comprehensive context. In addition to the results summarized above, the dissertation also clearly points to potential directions for further research. The relationship between landscape and society is a very complicated interrelated system, and the further mapping of its threads will probably provide work for environmental historians for a long time .