

Changes of landscape in the Sió-Sárvíz Valley (Transdanubia, Hungary) due to human activity. Analysis of old maps and historical data.

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Extended Abstract

1. Formation of the Sió-Sárvíz Valley, climatic fluctuations and human activity from the Palaeolithic period to the 18th century

Sió-Sárvíz Valley was formed at the end of Ice Age 11 000 years ago.

The climate was warm and wet between 6000 and 4500 BC, and the area of river-basins increased in the region. Huge areas of woods were cut, and farmers formed fields and meadows in the Bronze Age between 2700 and 1300 BC.

In the 1st and 2nd, century Romans settled down and created the province of Pannonia in the territory of Transdanubia. They built roads, towns, forts in the Sió-Sárvíz Valley.

Life continued calmly after the Roman occupation in smaller, native settlements of Celtic population. Some settlements near to Roman roads were more influenced by Roman trade and handicraft. The biggest palace of the province was built in **Sárszentmihály**. In the Roman towns and in rural estates the building of baths, aqueducts, dams, floodgates and fountains showed a high level of hydrological activity.

According to the latest data of climate history and dendrochronology, the neighbouring Lake Balaton region and Southern Transdanubia had a mild, almost Mediterranean climate. In the mild climate, a high level of agricultural activity is traceable: Romans planted vineyards and orchards. Near the Roman town Gorsium, in **Tác-Margittelep** (Sárvíz Valley) **peach** was planted in the 4th century AD.

In the Middle Ages the coronation town of **Székesfehérvár** became the centre of the Sió-Sárvíz Valley. In the 12th and 13th centuries, animal husbandry was the most significant branch of agriculture. Toponyms such as

Bikád, Bikács, Tinód refer to this. **Szekszárd** had a Benedictine monastery, which has been a wine region even today. The market-town of **Ete** was ruined in Ottoman wars. The castles of **Ozora** and **Simontornya** remained local centres even in the period of Ottoman rule. By the end of 17th century the southern part of the Sió-Sárvíz Valley became one of the most ruined and deserted regions of the Hungarian Kingdom.

2. Transformation of landscape in the 18th and 19th centuries. Representation of the region on maps in the 16th and 19th centuries

Lazius's map of Hungary (published in 1552) represented **Sárvíz** as a river flowing from north-west to south-east.

On **John Speed's** map of Hungary (published in 1626), the castles of **Ozora** and **Simontornya** were drawn as islands emerging from the marshland of river Sárvíz.

Johann Cristoph Müller represented Sió as a river flowing south-east of **Lake Balaton**, Sárvíz Valley as a marshy belt.

Ignác Müller, the military engineer, who was born in Székesfehérvár, created a map of Hungary in 1769 and represented a very detailed hydrology of the Sió-Sárvíz Valley.

1782-1785, First Military Survey of Hungary: marshlands before the drainage works.

János Lipszky published his famous and modern map of Hungary, which contained hydrological data characteristic of the Sió-Sárvíz Valley before the water-draining projects.

In 1762, **Ferenc Böhm** surveyed the Sárvíz Valley and he recommended an overall drainage of the region.

In 1811 and 1813 the southern section of Sió-Sárvíz between **Cece** and **Sióagárd** was regulated by the plans of **József Beszédes**.

In 1821-26, the northern section of the Sió-Sárvíz Valley was canalized. In the middle of the 19th century, the mouth of Sárvíz was transferred 33 km to the north.

After the water regulation projects, a new problem arose in the region: in 1854-55 the Danube's flood flowed back into the new artificial river bed and many shelves developed in it.

The upper section of the Sió river (Siófok-Simontornya) was also drained, and a floodgate was built in 1863 to control the water level of Lake Balaton

In 1833-36, the first map of Hungary of Lajos Scedius and Sámuel Blaschnek which was published with Hungarian title represented the upper section of Sárvíz as two parallel canals (**Nádor Canal, Malom Canal**).

József Homolka published the agricultural map of Hungary in 1895. Homolka represented meadows, flood areas and scattered dots of forests. The mouth of Sió-Sárvíz was covered by wet reedy areas.

3. Study of consequences of changes by the analysis of licences of drainage works and other hydrological activity

After draining, the land use and agriculture changed in the region. In the end of the 19th century, drained areas were involved into farming. Hydrological activity was administrated by the county administration. The process of canalization works were introduced into the **hydrological record**. They contained the process of canalization work, county permission of the process, locations, plans, implementation of the works, expert opinion.

The **hydrological permissions** were emitted by the sub-prefect of the county. The data were introduced into the hydrological record of the certain settlement by the archivist of the county. During my research of the region, I analysed sixty-two hydrological permissions of twenty- eight settlements. These records are complex sources of land use, the state of environment and changes of economic activity.

The artificial riverbed of the Sárvíz River was not deep enough, the canalization works were not executed perfectly.

Example one: in **Nádasdladány, Tallián ditch** running between two branches of Sárvíz was canalized in 1906. The ditch had to be deepened and maintained more carefully than earlier.

Example two: Near to the mouth of Sió-Sárvíz in **Szekszárd-Palánkpuszta** the ox-bow of **Kapszeg-tó** (a lake) was drained but enough water was left in it to provide water for the ox-bow in order to support reed cultivation.

In the beginning of the 20th century, irrigation canals were built in **Nádasdladány, Simontornya, Balatonszabadi**. Some rich landlords asked for permission to build fishpond systems in their estates: in **Simontornya, Somogyfok-puszta** (near Siófok), **Ádánd, Szabadhídvég-Pélpuszta**.

In the first decades of the 20th century, many industrial investments took place in the Sió-Sárvíz Valley: leather factory, mining of sand, distillery used the water of the two rivers. At present, the remnants of the old marshland **Rétszilas Lakes (Sáregres), Sárkány Lake (Sárkeresztúr), Sós Lake (Sárszentágota)** and **Kapszeg Lake (Mözs)** are the most precious areas of the Sárvíz ecological corridor.

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