

## DATABASES OF CADASTRAL SURVEYS (*TAPU DEFTERİS*) OF OTTOMAN HUNGARY AND ITS FRONTIER ZONES (16–17TH C.)\*

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Defterology has always been of primary importance in Hungarian Osmanistics. Even the birth of this scientific discipline was partly overseen by Hungarian scholars, and later the occupied parts of historical Hungary became one of the most studied regions of the Ottoman Empire.<sup>1</sup> This, and especially the interest toward the *tapu defteris* of *sancaks* was quite reasonable: one of the unique features in the zone of Ottoman penetration beyond the official borders was the establishment of a so-called *condominium* lasting for a century and a half, where both power centres, the Habsburgs and Ottomans, maintained their influence in everyday practices. This dual power – depending on distance, available military forces, financial resources and political circumstances – extended to the fields of administration, jurisdiction and taxation too. This special situation resulted in sometimes complementary, sometimes contradictory sources in the Osmanlı, Hungarian, Latin and German languages describing the situation in the Kingdom of Hungary and Ottoman Hungary too. This speciality is completely missing from the Balkan region. This uniqueness enables researchers to investigate the impact of the Ottoman conquest, the coexistence of different administrations and this makes the Hungarian research area highly valuable. However, while in the case of Hungary researchers have the possibility to apply source criticism by comparing the content of different source types, the linguistic difficulties – an analysis of the sources requires broad language

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1 A Hungarian scholar, Lajos Fekete was one of the first to publish a *defter*: *Az esztergomi szandzsák 1570. évi adóösszeírása*. Budapest, 1943. Later he wrote a two-volume manual for the analysis of Ottoman financial sources, which was used as study material for generations (Idem, *Die Siyāqat-Schrift in der Türkischen Finanzverwaltung*. Budapest, 1955). Subsequently Gyula Káldy-Nagy, Géza Dávid and Előd Vass published the *defters* of several *sancaks*. See details at: Éva Sz. Simon, *Tematikus segédlet a budai vilájet Magyarország területére eső szandzsákjainak 16. századi adó- és birtokösszeírásaihoz*. [https://mnl.gov.hu/mnl/ol/leveltari\\_segedlet\\_oszman\\_osszeirasokhoz](https://mnl.gov.hu/mnl/ol/leveltari_segedlet_oszman_osszeirasokhoz). Date of last download: 08.18.2020.

skills that are often missing – and the limited accessibility of sources (as these are located in numerous places) also limit research possibilities.

Both research relying on only one source type and isolated investigations relying solely on one region also pose threats. Twenty-five years ago, Heath W. Lowry warned researchers by using a picturesque metaphor. In his opinion, historians who focus on one sample area when dealing with defterology barely see the relationships and context and “they all resemble the blind men attempting to describe an elephant based on their individual gropings of separate parts of its anatomy”.<sup>2</sup> The new methods and results presented here were developed as a consequence of such “gropings” in Hungary, and despite the fact that they focus on the fringe of the Ottoman conquest – in order to illustrate the steps of accommodation in occupied regions and penetration beyond the border – they may have relevance in other regions too. The methods (cataloguing, digitizing and processing all *defters* in an extendable, well-organized, transparent database) can be applied in other regions, while the results in a specific region can be compared to the situation in other borderlands (Podolia, Crimea). The essence of the Hungarian method is the processing of all the *tapu defteris* dealing with Hungary, which are organized into a database and also visualized for a better understanding of patterns and phenomena. This method offers us enhanced possibilities for comparison in space and time by overlaying single maps containing pre-selected and pre-arranged *defters* material from different timespans. This may help answer several basic questions: for example, how the administrative boundaries between the Ottoman and Habsburg Empires changed in space and time; how border protection was organized; how the functions of sub-regions changed, as they were transformed from peripheries to core areas; or what the logic behind the distribution and pattern of *has*-estates and *sipahi*-estates was, and where were these located; why and how the number and composition of *sipahi* military forces fluctuated. In order to exploit the peculiarity of the situation and the richness of source-types, the processing of conscriptions of the Hungarian administration<sup>3</sup> is also undertaken within these frames. This enables researchers to answer more new questions, like determining the area of the condominium and reinterpreting its features; temporal and spatial changes in its extent; the relation of Hungarian and Ottoman taxes to each other, their differences in core areas and peripheries under dual taxation; the spatial and temporal progress of desertification; differences in the number of conscripted, etc.

The systematic processing of the *tapu defteris* of the *condominium* began in 2014 with the support of the Hungarian Research Fund (now National Research,

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2 Heath W. Lowry, ‘The Ottoman *Tahrîr Defterleri* as a Source for Social and Economic History: Pitfalls and Limitations’, in Hans Georg Majer – Raoul Motika (eds.), *Türkische Wirtschafts- und Sozialgeschichte von 1071 bis 1920. Akten des IV. Internationalen Kongresses*. Wiesbaden, 1995, 185.

3 National Archives of Hungary (MNL OL): Magyar Kincstári Levéltárak, Magyar Kamara Archivuma, Conscriptioes Portarum (E 158).

Development and Innovation Office).<sup>4</sup> The parallel operation of the two harmonized databases (an SQL-Oracle based relational database and its GIS-supported version) was realized by the researchers of the National Archives of Hungary and the HAS RCH Institute of History including Éva Sz. Simon (principal investigator), Klára Hegyi, Balázs Sudár (ottomanists) and Gábor Demeter as geographer. In 2019 the ottomanists Ilona Dorogi and Miklós Fóti joined the research group. The group of researchers was reinforced by the IT and GIS experts Zsolt Záros, László Kollányi, and Péter Kollányi, a cartographer, Béla Nagy and by two Serbian colleagues from the University of Novi Sad (Boris Stojkovski, Miroslav Pavlović). The researchers' task was to search for, collect, read and process the full corpus of Ottoman documents (*mufassal defterleri*, *icmal defterleri*, *timar ruznamçeleri*, *cizye defterleri*)<sup>5</sup> referring to South- and Central Hungary and also to harmonize their data-structure and make them incorporable into a database through a pre-defined (and later, according to the growing demands, modified) data entry panel, thereby way enabling clients of the National Archives to browse in the data and professional researchers to derive conclusions from the collected dataset.

When creating the database, the key goal was to promote comparative research activities and visualization. The geographical scope of the research in 2014 included only the *sancaks* of Hatvan, Filek (Füleke), Görösgal (Görösgal), Peçuy–Mohaç (Pécs–Mohács) and Sigetvar (Szigetvár) during the experimental phase of the project, the processing of which has already been finished and the results (the database called “Oszmán összeírások gyűjteménye” – Collection of Ottoman *tapu defteris*) are available at <https://adatbazisokonline.hu/adatbazis/oszman>. Though the database itself is in Hungarian, the Ottoman ranks, offices and names can be searched in the Turkish language. The English translation will be finished by 2023 together with the expanded version of the database which will include (1) the data on settlements, office-holders and officers of four more Ottoman *sancaks* (Kopan [Koppány], Sekçöy [Szekcső], Seksar [Szekszárd], Segedin [Szeged]). (2) The Hungarian (Habsburg) documentation related to these regions will also be integrated into the Ottoman documentation by 2023. This second phase of research is also supported by the National R&D&I Office. So far 250 thematic maps have been published using the browsed data of databases, and these maps are available at

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4 Yearly accounts are available at journal: *Catastrum* 2014/3: 31–44.; 2015/1: 46–48.; 2016/1: 54–56.; 2017/1: 61–64; 2018/1: 59–64; 2019/1: 53–64. <http://www.catastrum.hu/index.php/hu/lapszamok>. Date of last download: 08.18.2020.

5 The *defters* of the Hungarian *sancaks* had been partly devastated, partly dispersed. Beside Istanbul there are *defters* in Vienna, Paris, Berlin and Munich, but there are some also in Dresden, Leipzig, Copenhagen, Sofia – only one of them is available in Budapest. See details at: [https://mnl.gov.hu/mnl/ol/leveltari\\_segedlet\\_oszman\\_osszeirasokhoz](https://mnl.gov.hu/mnl/ol/leveltari_segedlet_oszman_osszeirasokhoz). Despite the devastation, their number is significant: in the case of the *vilayet* of Buda there are more than 500 known conscriptions in 150 volumes.

<http://mnl.gov.hu/mnl/ol/terkepek>.<sup>6</sup> The platform offering GIS-aided visualization is not yet available to the broader research community because of the lack of financial resources – maps can be produced on the scene, at the central building of the National Archives with the supervision of archivists, or can be ordered at [simon.eva@mnl.gov.hu](mailto:simon.eva@mnl.gov.hu).

For the better understanding and operation, users' manuals were also published in English and Hungarian.<sup>7</sup> The basic structure of the database is also outlined here in the appendix (see below). This may help users browse data and create queries – as these functions are already available to the broader public (unlike visualization).

The project has already had some achievements. First, some general rules regarding the compilation of *mufassal defteri* and *icmal defteri* (available in the BOA for the whole area of the empire) and the Hungarian *defters* were investigated and re-evaluated. Whereas in the core area of the empire most of the *defters* were not connected to the change in the person of the ruler as it was supposed in the early literature,<sup>8</sup> but rather to the preparation of the next great campaign (most of the *defters* were compiled in 1518/19 as a prelude to the campaign against Hungary and Rhodes, or in 1528, just before the first campaign against Vienna and in the 1570s before the battle of Lepanto), in the Hungarian fringe the situation was somewhat different. Here most of the *defters* was created just before the conclusion of major peace treaties and armistices between the Habsburgs and Ottomans (in 1546, then in 1552, in 1558/59, in 1560/62, in 1567 – the dates of peace negotiations and treaties were 1547, 1553, 1559, 1562 and 1568 respectively). Each peace treaty was preceded by a conscription, where the expressions *ber vech-i tahmin* or *hali ez raiyyet* were adopted to yet unconquered, earlier not conscripted regions (that were not under Ottoman taxation before) and these were to symbolize Ottoman territorial aspirations. These quickly conscripted, administratively incorporated, but not yet occupied regions (according to the data of parallel Christian conscriptions) were distributed as new *sipahi*-estates (*timars*, *ziamets*) by the Ottoman administration. These conscripted territories were considered as integral parts of the empire during the subsequent negotiations on peace in the ensuing period. Without firm control

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6 Entitled: Éva Sz. Simon – Klára Hegyi – Gábor Demeter, *Atlasz a 16. századi oszmán jövedelem- és birtokgazdálkodás tanulmányozásához*. Date of last download: 08.18.2020.

7 An SQL-Oracle type database was selected because it enables the joint record and usage of sources with significantly different content and details. Some generalization was of course, required in order to obtain greater flexibility. Éva Sz. Simon, *Útmutató az Oszmán összeírások című adatbázis működéséhez*. [https://mnl.gov.hu/mnl/ol/utmutato\\_az\\_oszman\\_osszeirasok\\_cimu\\_adatbazis\\_mukodeséhez](https://mnl.gov.hu/mnl/ol/utmutato_az_oszman_osszeirasok_cimu_adatbazis_mukodeséhez); Gábor Demeter, *Használati útmutató az OTKA K 108919 számú pályázati támogatással készült „Oszmán összeírások” című relációs adatbázis rekordjainak vizualizálására kifejlesztett GIS szoftverhez / Users' Guide to the GIS Software Supporting the Visualization of Data in Project OTKA K 108919 (Ottoman Tapu Defters)*. [https://mnl.gov.hu/mnl/ol/hasznalati\\_utmutato\\_a\\_gis\\_szoftverhez](https://mnl.gov.hu/mnl/ol/hasznalati_utmutato_a_gis_szoftverhez). Date of last access: 08.18.2020.

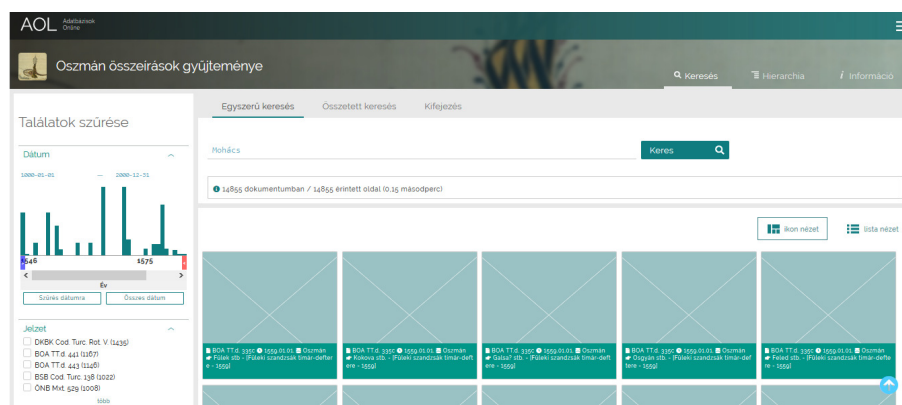
8 Ömer Lütfi Barkan – Enver Meriçli, *Hüdavendigâr Livası Tahrir Defterleri*. I. Ankara, 1988, 14.

over the area, it was the estate holder who was compelled to organize taxation through military raids in order to collect the income assigned to him by force. This was the method of establishing Ottoman rule behind the official border, despite the official peace. This tactic also offered a way to decrease the increasing burdens on the Ottoman treasury. However, this also meant that Ottoman estate holders were interested in maintaining their power by using coercive measures (often raw force), and thus, in the long run, it hindered the stabilization and consolidation of power.<sup>9</sup>

Another interesting result comes from Klára Hegyi's thorough comparative investigation of Christian and Ottoman archival material in the *sancak* of Filek. Being a borderland, military clashes between the soldiers of Royal Hungary and the Ottoman troops were frequent in this region for a hundred and fifty years. The central treasury in Buda demanded only a small part of the incomes of the *sancak* of Filek: most of the revenues were left at the disposal of the *sipahis*, whose task in turn was to increase the area under taxation. This division of usufructus of incomes was a speciality of the Hungarian borderlands. Another interesting phenomenon here was the modification of the Ottoman taxation system, which became very similar to the Hungarian as time passed – this is testified by the increase of socage (*robot*) in the fields of the *sipahis*. This was, however, an unofficial practice, because it is not the Ottoman documents that contain detailed information about this, but the conscriptions of the Hungarian counties.<sup>10</sup>

## APPENDIX

### I). Data Content of the SQL – Oracle Database<sup>11</sup>



9 Éva Sz. Simon, 'A szülejmáni béke. A magyarországi oszmán adóösszeírások és a magyar-oszmán békekötések összefüggései', *Aetas* 3320:4 (2018) 53–72.

10 Klára Hegyi, *A füleki szandzsák*. Budapest, 2019.

11 [https://mnl.gov.hu/mnl/ol/utmutato\\_az\\_oszman\\_osszeirasok\\_cimu\\_adatbazis\\_mukodeséhez](https://mnl.gov.hu/mnl/ol/utmutato_az_oszman_osszeirasok_cimu_adatbazis_mukodeséhez).

The database “Oszmán összeírások gyűjteménye” (Collection of Ottoman Conscriptions) is available at “Adatbázisok Online” (<https://adatbazisokonline.hu>), which is a joint data platform developed by the National Archives of Hungary for other archives in the country. Data browsing is aided by Apache Solr. Solr documents, that enable quick searches, were created by scripts from the raw data in the database. Browsing can either cover the content of all available digital databases or can focus on “Oszmán összeírások gyűjteménye” by clicking on the button that allows us to select the required database. Within the database one can use a simple search that covers all data fields, a complex search (some pre-selected data fields are covered – here indicated by CAPITAL letters), or a faceted search (valid to some data fields – indicated here with **bold** letters). Beyond these, hierarchic browsing is also possible: <https://adatbazisokonline.hu/adatbazis/oszman/hierarchia>.

The screenshot shows the AOL (Adatbázisok Online) interface. The left sidebar contains a hierarchical tree view of Ottoman conscriptions, with 'timár-defter' expanded to show various locations including Miskolc. The main content area displays the details for a specific conscription: 'Vámosgyörk stb. - Defter-i icmal-i livá-i Hatvan 970'. The details are as follows:

|                          |                                    |
|--------------------------|------------------------------------|
| BOA TT.d. 345            |                                    |
| <b>Összeírás címe</b>    | Defter-i icmal-i livá-i Hatvan 970 |
| <b>Összeírás típusa</b>  | timár-defter                       |
| <b>Összeírás dátuma</b>  | 970 - 1562-08-31 - 1563-08-20      |
| <b>Torzszám</b>          | MNL OL X 4416                      |
| <b>Jelzet</b>            | BOA TT.d. 345                      |
| <b>Raktáregység</b>      | 10662 - mikrofilmdoboz             |
| <b>Birtoktest neve</b>   | Vámosgyörk stb.                    |
| <b>Birtoktest típusa</b> | szultáni régi hász                 |
| <b>Bejegyzés oka</b>     | újraelosztás                       |
| <b>Összes jövedelem</b>  | 1.038.700                          |
| <b>Oldalszám</b>         | 107 - 108                          |

The language of browsing is basically Hungarian, but the name of the processed *defters*, the ranks and offices of the donated Ottoman officers, and the Osmanlı name of the settlements is browsable in Turkish (with Latin transliteration) too.

**Basic Data**

|                  |   |
|------------------|---|
| Összeírás címe   | Defter-i mufassal-i liva-i Mohaç [1546]   |
| Összeírás típusa | szandzsák-összeírás   |
| Összeírás dátuma | év nélkül - 1546-01-01 - 1546-12-31   |
| Törzsszám        | MNL OL X 4416   |
| Jelzet           | BOA TT.d. 441   |
| Raktáriegység    | 10126 - mikrofilmdoboz  |
|                  | <ul style="list-style-type: none"> <li>📍 Mohácsi szandzsák kiterjedése 1546-ban / The territorial extent of the sanjak of Mohács in 1546</li> <li>📍 Mohácsi szandzsák közigazgatási beosztása 1546-ban / The administrative division of the sanjak of Mohács in 1546</li> </ul> |

- A.) **Összeírás címe / Title of conscription:** the Osmanlı name of the source in Latin transliteration
- B.) **Összeírás típusa / Type of conscription:** data only in Hungarian  
 - szandzsák-összeírás = *mufassal defteri*  
 - fejadó-összeírás = *cizye defteri*  
 - tímár-defter = *icmal defteri*  
 - tímár rúznámce = *timar ruznamçe defteri*
- C.) **Összeírás dátuma / Date of conscription:** according to *hicri* and according to Christian calendar too (for example: 978.Ca.evasit – 1570–10–21 – 1570–10–30)
- D.) **Törzsszám / Fond number:** the fond number of the copy of the original source in the National Archives of Hungary
- E.) **Jelzet / Original fond number:** fond number of the source in its original location (including the name of the institution)
- F.) **Raktári egység / Storage unit:** the number of the microfilm containing the copy of the original source at the National Archives of Hungary
- G.) **Kapcsolódó dokumentumok / Related documentations:** copies, links, publications in connection with the original source
- H.) **Bejegyzés oka / Reason of conscription:** data in Hungarian  
 in the case of *mufassal defteri* – új felmérés / new conscription  
 in the case of *cizye defteri* – állami adó kirovása / taxation purposes  
 in the case of *icmal defteri* – újraelosztás / redistribution of estates and incomes  
 in the case of *timar ruznamçesi* – berát-megújítás / renewal of *berat*; birtok összetételének átalakítása / change in estate structure; birtok újraegyesítése / reunification of estates; birtokjog megerősítése / confirmation of ususfructus and property rights; elhunyt apa utáni köteles rész / compulsory part after the death of the father; jövedelem hiányának csökkentése / decrease of income deficits or low salaries; jövedelememelés elismertetése / acknowledgement of higher salary; megüresedett birtok kiosztása / redistribution of emptied estate; restitutio etc.

Further basic data in the case of *icmal defteri* and *timar ruznamçesi*:

- I.) Birtoktest neve / The name of estate: in Hungarian, shown in its late medieval form<sup>12</sup>
- J.) Birtoktest típusa / Type of estate: Hász = *has*, ziámet = *ziamet*, tímár = *timar*
- K.) Összes jövedelem / Total income: total income of settlements belonging to the same estate, in *akçe*
- L.) Napló dátuma / Date of diary: according to *hicrî* and Christian calendar
- M.) Tezkere dátuma / Date of *tezkere*: according to *hicrî* and Christian calendar
- N.) Tezkere kiadásának helye / Place of issuing the *tezkere*: in Hungarian, shown in its late medieval form
- O.) Tezkere felterjesztője / Name of the *tezkere* petitioner/submitter: name given according to Hungarian standards<sup>13</sup>
- P.) Oldalszám / Page number: location of the estate in the source

#### Data Sheet of *Mufassal and Cizye Defteri*

|  |                       |  |
|--|-----------------------|--|
| Mohács - szandzsák                                       |                       |  |
| Mohács - nâhije  |                       |  |
| Mohács - település - város                               |                       |  |
| 1546_Buda_Mohács_Mohács_903; 1552_Buda_Mohács_Mohács_752 |                       | oldalszám: 364                                 |
| 1BAR123  |                       |  |
| Érintett közig. Egységek                                 | lokalizálás:          | Tartozik a mohácsi kazához. Tartozik Mohácshoz |
|  | adózott egység száma: | 227  |
|  | adó:                  | 44.971 akcse                                   |
|  | megállapítás:         | felméréssel                                    |
| Tartalomgazda: MNL OL                                    |                       |  |

- Q.) Érintett közig. egységek / Data of administrative units in question: in the case of *mufassal defteri* one settlement, in the case of *icmal defteri* the enumeration of settlements belonging to the same estate.
  - 1.) hierarchic administrative classification: name of szandzsák = *sancak*, kaza = *kaza*, nâhije = *nâhiye* (Mohács szandzsák, Mohács nâhije)
  - 2.) településnév / name of settlement: in Hungarian, shown in its late medieval form<sup>14</sup> (Mohács)

12 Source: Pál Engel, *The Hungarian Kingdom at the End of the Middle Ages – Digital Map and Database*. Budapest, 2001.

13 Balázs Sudár – Klára Hegyi – Éva Sz. Simon, *Segédlet az oszmán-török szövegekben arab betűvel lejegyzett tulajdonnevek átírásához*. [https://mnl.gov.hu/mnl/ol/oszman\\_torok\\_nevek\\_atirasa](https://mnl.gov.hu/mnl/ol/oszman_torok_nevek_atirasa). Date of last access: 08.18.2020.

14 Source: P. Engel, *The Hungarian Kingdom*.



3.) településtípus / type of settlement: város = *varoş*, falu = *kariye*, puszta = *mezraa*, kikötő = *iskele*, mahalle = *mahalle*, major = *çiftlik*, malom = *değirmen*, vakuf = *vakıf*

4.) lokalizálás / localization: the name of the *kaza* incorporating the settlement, or the name of nearby town and castle

5.) adózott egység száma / number of taxation units: *hane* szám / number of *hane*

6.) adómegállapítás módja / type of tax-rating:

- felméréssel / surveying = *hasil an el-öşr ve'l-rüsum*

- átalányösszegben / lump sum = *ber vech-i maktu*

- becsléssel / estimation = *ber vech-i tahmin*

- névlegesen / nominally = *hasil an el-öşr*

7.) adó / tax (total / összesen = *hasil*): given in *akçe*

It would also be possible to visualize tax-paying individuals and the partial sums paid by them. However, these detailed data are not integrated into the database yet.

**Data Sheet of *İcmal and Timar Ruznamçe Defteri***

| Sorsz.                              | Név           | Apai név & titulus | Származás lakab | Titulus                   | Szolg. helye | Előző titulus & szolg. helye & jöv. | Összeg státusz & összeg          | Jogosult összeg státusz & összeg | Jövedelem eltérés | Informatikai összeg |
|-------------------------------------|---------------|--------------------|-----------------|---------------------------|--------------|-------------------------------------|----------------------------------|----------------------------------|-------------------|---------------------|
| <b>Birtokosok</b>                   |               |                    |                 |                           |              |                                     |                                  |                                  |                   |                     |
| 1.                                  | Szinán        |                    |                 | szandzsákbég (sancakbeyi) | Szigetvár    |                                     | cemen. 330.001<br>yegun. 317.276 | cemen. 330.001                   | 0                 | 238.495             |
| Érdemei (részvétel portyákban):     |               |                    |                 |                           |              |                                     |                                  |                                  |                   |                     |
| Nincs adat                          |               |                    |                 |                           |              |                                     |                                  |                                  |                   |                     |
| <b>Előző birtokosok</b>             |               |                    |                 |                           |              |                                     |                                  |                                  |                   |                     |
| 1.                                  | Turszun vajda |                    |                 |                           |              |                                     | n.a.                             | NINCS                            |                   | 7.500               |
| Birtokteste:                        |               |                    |                 |                           |              |                                     |                                  |                                  |                   |                     |
| Szigetvár - szandzsák               |               |                    |                 |                           |              |                                     |                                  |                                  |                   |                     |
| Segesd - nájije                     |               |                    |                 |                           |              |                                     |                                  |                                  |                   |                     |
| Porrog - település - falu           |               |                    |                 |                           |              |                                     |                                  |                                  |                   |                     |
| 1570→1571_Buda_Szigetvár_Segesd_129 |               |                    |                 |                           |              |                                     |                                  |                                  |                   |                     |
| 15M288                              |               |                    |                 |                           |              |                                     |                                  |                                  |                   |                     |
| lokalizálás: Tartozik Berzencéhez   |               |                    |                 |                           |              |                                     |                                  |                                  |                   |                     |
| adó: 7.500 akcse                    |               |                    |                 |                           |              |                                     |                                  |                                  |                   |                     |
| oidalszám: 7                        |               |                    |                 |                           |              |                                     |                                  |                                  |                   |                     |

R–S.) Birtokosok & Előző birtokosok / Data on estate holders and their predecessors. The database contains the name of the estate holder and his predecessor (if known) in the same datasheet.

1.) név / name: given according to Hungarian standards<sup>15</sup>

2.) apja neve és titulusa / father's name and title: given according to Hungarian standards, the title in Hungarian and Turkish (browsable)

3.) lakab: surnames, cognomens in Latin transliteration, referring to origin (browsable)

<sup>15</sup> *Ibid.*

- 4.) szolgálati hely / place of garrison: in late medieval form
- 5.) előző titulus, szolgálati hely és jövedelem / former title, location, income
- 6.) összeg státusa és összeg / the type of sum: Ottoman expressions are used  
*yekun* – total income of the estate  
*cemen* – in the case of more than one estate in one hand, or in the case of estate parts located in different *sancaks*. After the enumeration of parts comes the income “altogether”  
*hisse* – in the case of multiple estate holders on one estate the sum is given per estate holder
- 7.) jogosult összeg (entitled sum): the value and status of entitled sum (given in Osmanlı). The sum is browsable  
*ber vech-i tekmlil* – by way of completion  
*ber vech-i kabul* – based on agreement  
*ber muceb-i emr-i ali* – based on high order  
*sülsan üzere* – two-thirds of the daily regular payment multiplied by 1000
- 8.) jövedelem eltérés / difference between entitled sum and real sum
- 9.) **érdemek / merits**: description in Hungarian (browsable). For example: fought against the infidels who attacked the empire / successful activity to increase the revenues of the treasury / raid against castles of Berzence and Segesd / heroic fight against and infidel raid from the castle of Eger led by... etc.

## II.) Data Visualized in GIS<sup>16</sup>

The GIS-aided database relies on a settlement level base map illustrating the late medieval Hungarian kingdom and containing altogether 25,032 geographic entities (polygons). It operates using SQL queries based on scripts, which obtain data from the Oracle database described above and visualize them in TatukGIS through the 29 scripts. The following topics can be illustrated:<sup>17</sup>

- the changes in the extent of areas conscripted by Ottomans in different time horizons<sup>18</sup>
- proper territorial extent of the *sancaks*<sup>19</sup>
- proper administrative division of the *sancak* (*nahiye, kaza*)<sup>20</sup>

16 [https://mnl.gov.hu/mnl/ol/hasznalati\\_utmutato\\_a\\_gis\\_szoftverhez](https://mnl.gov.hu/mnl/ol/hasznalati_utmutato_a_gis_szoftverhez).

17 For produced maps visit: <https://mnl.gov.hu/mnl/ol/terkepek>.

18 <https://mnl.gov.hu/download/file/fid/573103>.

19 The maps illustrating the territorial extent of the *sancaks* based on the *mufassal defteri* can be opened from the database.

20 The maps illustrating the administrative division of the *sancaks* based on the *mufassal defteri* can be opened from the database.

- actual estate structure in given time horizons (the estates of soldiers illustrated for each person)<sup>21</sup>
- the territorial changes in estates of one concrete person within a given time interval
- the territorial change in one estate/landholding within a given time interval
- visualization of estates based on the holder's title / position / rank<sup>22</sup>
- visualization of estates of holders with the same title /rank and changes within the given timeframe
- the location and distribution of *has*, *ziamet*, *timar* and *müstahfiz timar* estates for each *sancak*<sup>23</sup>
- settlement types conscripted<sup>24</sup>
- number of tax payers and changes over time<sup>25</sup>
- total amount of tax per settlement, tax per *hâne* and their changes<sup>26</sup>
- type of tax-rating<sup>27</sup>
- settlement without conscripted *reaya* population (only nominally possessed areas)
- estates distributed for military merits (per raids)
- name of petitioner/submitter
- the frequency of changes (stability) in the estates of a given *sancak*
- reasons of changes in estate structure (died, resigned, relocated, etc.)
- the reason of conscription

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21 For example, Hatvan 1546: <https://mnl.gov.hu/download/file/fid/572849>; Szigetvár 1570: <https://mnl.gov.hu/download/file/fid/573059>.

22 For example, Pécs 1570: <https://mnl.gov.hu/download/file/fid/573028>.

23 For example, Pécs 1570: <https://mnl.gov.hu/download/file/fid/573029>.

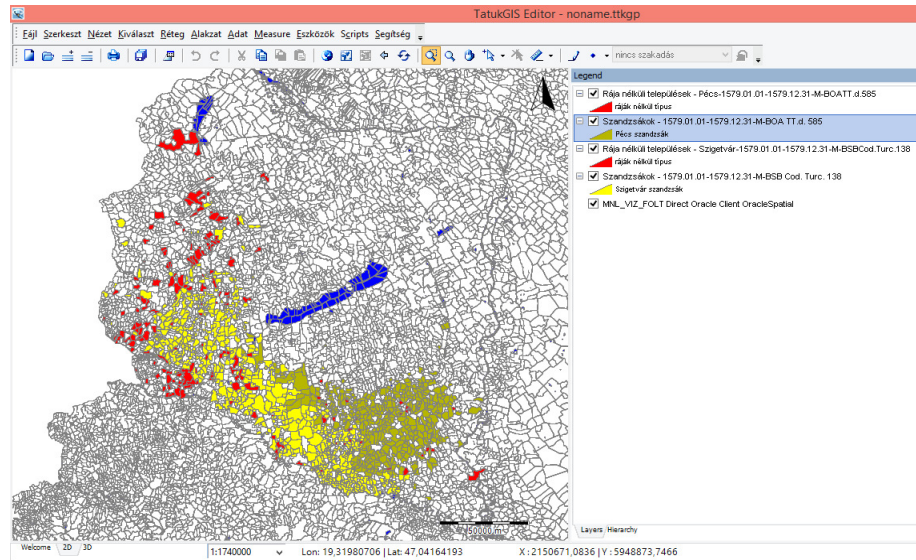
24 For example, Mohács 1546: <https://mnl.gov.hu/download/file/fid/572967>; Görösgal 1552: <https://mnl.gov.hu/download/file/fid/572832>.

25 For example, Fülek 1559: <https://mnl.gov.hu/download/file/fid/572818>.

26 For example, Szigetvár környékének adózása <https://mnl.gov.hu/download/file/fid/573096>.

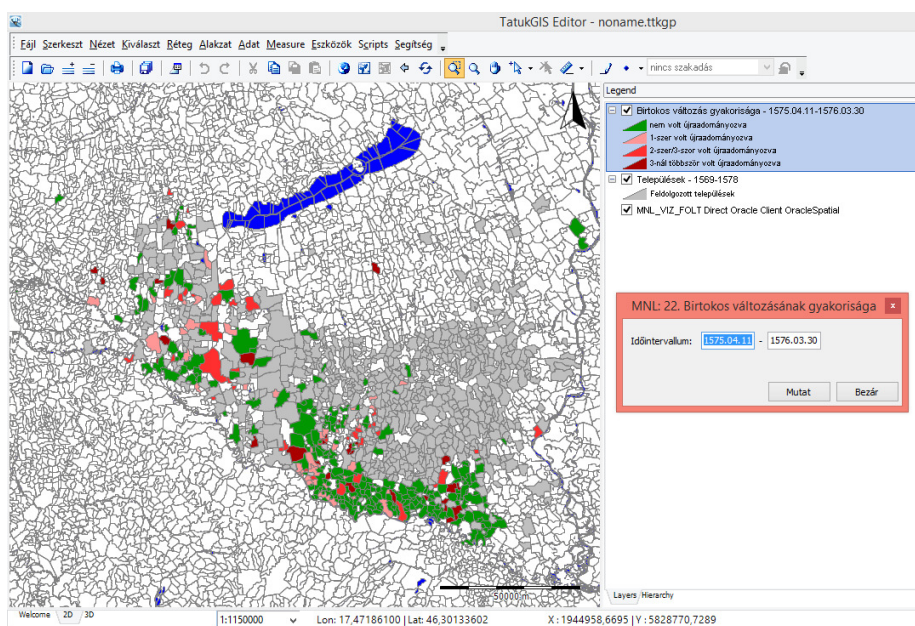
27 For example, Szigetvár 1579: <https://mnl.gov.hu/download/file/fid/573091>.

Map 1. Settlements without conscripted *reaya* population = *hali ez raiyyet* settlements in the central *sancak* of Pécs and the peripheral *sancak* of Szigetvár in 1579.<sup>28</sup>

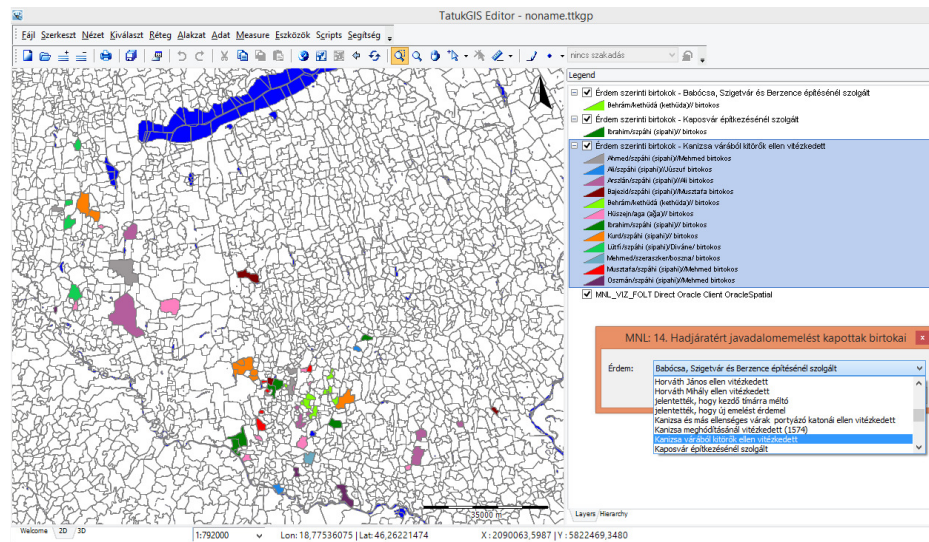
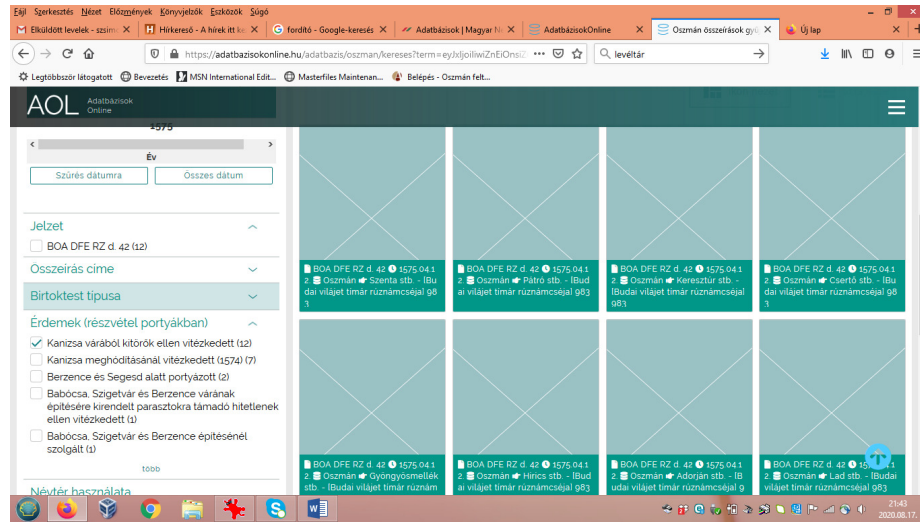


<sup>28</sup> Map by Éva Sz. Simon and László Kollányi.

Map 2. The frequency of changes in estate holders/ownership in the year 983 after *hicri* (1575/76) in the *sancak* of Szigetvár (light grey refers to all processed data in the given year).<sup>29</sup>



29 Map by Éva Sz. Simon and László Kollányi.

Map 3. Browsing and illustration of estate donations based on merit types.<sup>30</sup>

<sup>30</sup> Map by Éva Sz. Simon and László Kollányi.