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Reading the Venetian Cadastral Record: An Evidence for the Environment, Population and Cultural Landscape of the 18th Century Dalmatia

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The scope of the research is to analyse the record as a textual and graphic document as well as the evidence and its potential for historical-geographical and environmental-historical research. A special attention is given to the analysis of the environment, environmental change, population and cultural landscape.

Key words: 18 Century, Dalmatia, cadastral survey, cadastral map, Venetian cadastre, Grimani cadastre, environment, population, cultural landscape, Investitures

Mletački katastar u istraživanju okoliša, stanovništva i kulturnog pejsaža Dalmacije 18. stoljeća

Cilj istraživanja je analiza izvora kao tekstualnog i grafičkog dokumenta, te njegove mogućnosti u historijsko-geografskom istraživanju, te istraživanju povijesti i promjena okoliša. Posebna je pozornost posvećena upravo analizi promjena okoliša, stanovništva i kulturnog pejsaža.

Ključne riječi: 18. stoljeće, Dalmacija, katastarska izmjera, katastarska karta, mletački katastar, Grimanijev katastar, okoliš, stanovništvo, kulturni pejsaž, Investiture

INTRODUCTION

Cadastral records provide generally a wide range of information. Depending on the methodology they usually include population data, various informations about the land; land use, land property, livestock. On the basis of those direct numerical data it is possible to obtain some significant indicators of the space in time, society and subsistence.

SCOPE AND METHODS

The scope of the research is to analyse the record as a textual and graphic document as well as evidence and its potential for historical-geographical and environmental-

historical research. That is primarily to trace and reconstruct the elements of natural environment (relief, soil, vegetation, water sources), as well as to trace the elements of human environment, precisely the cultural landscape (settlements, rural landscape), in particular the positioning of settlements in relation to the defined elements of natural environment. Those relations enable to determine the way of life and the subsistence of the population of the time and to trace the environmental change that happen to be highly interrelated. The comparison of certain elements and data of the record with the present state or with the other areas in the karst Mediterranean environment enable the evaluation of the possibbilities/unpossibilities and the accuracy and reliability of the record[1].

Venetian Cadastral Surveys and Agrarian Policy in 18-century Dalmatia

Although there are known some cadastral surveys in Dalmatia even from the 14 century (Stonski Rat), or from the 15 century (island of Pag) (Antoljak 1949), the first known agrarian operations started to accomplish in the 17 and 18 century on the newly gained territory under the Venetian rule in Dalmatia after the wars and peace treaties with the Ottoman Empire. The period of Ottoman occupation of Dalmatian Zagora interrupted the continuity of landownership and even changed the agrarian relations as well. After the peace treaties of Sremski Karlovci in 1699 and Požarevac in 1718, Venice extended and consolidated its possessions in Dalmatia the most, along the highest mountain ridges of Velebit and Dinara in the interior area. The territory under the Venetian rule in Dalmatia prior to the extension was called then "Aquisto Vecchio", and referred to the narrow coastal zone and islands. "Aquisto Nuovo" and "Nuovissimo" referred to the territory in the hinterland, in Dalmatian Zagora.

One of the basic differences between the old and new acquisitions was the matter of land property. In the legal system of the old acquisition the land was private, while the new land belonged to the State. The land was given by the investitures to the people (and the church) who already lived on the territory as well as to the Morlacchi immigrants from the Dinaric hinterland. The agrarian laws within the frames of agrarian operations regulated the policy of land repartition. That land was not supposed to be changed, divided or sold in any way or in any case. "Linea Nani", formerly political boundary stayed still as the boundary of two legal systems.

The extension of territory was the occasion for the new policy of land repartition that was regulated by the agrarian laws and followed by cadastral surveys (Grgić 1962; Omašić 1974). In the course of the 18-century there are known two cadastral surveys, following two major territorial extensions in the interior Dalmatian area. The first one is accomplished at the beginning of the 18 century, in the years of 1709-1711 (Vendramin cadastre), following the Peace treaty of Sremski Karlovci and the other one is from the middle of the century, in the years of 1756-1760 (Grimani cadastre)[2]. Made in different time – distant almost half a century, they employ different methodologies.

Dating the records

Venetian cadastral records for Dalmatia belong to both known cadastral surveys in 18 century. Some of them are originally dated. So, cadastral censuses for the Territory of

Knin and Morlacca (Velebit littoral) are parts of the Vendramin cadastral survey from the beginning of the 18-century (1709-1710), as indicated on the document. On the contrary, cadastral records for the interior Dalmatian Zagora area are presumably parts of the second Venetian cadastral survey in 18-century Dalmatia.

Due to the original direct indications as well as to the indirect control methods it was possible to make relatively sure presumptions about dating the record. The frontispiece of the cadastral census shows the remark of the foundation of the census upon the termination of investitures for the village Mirillovich from the year 1746 and the remark of the corresponding map from 1760. That is very much in accordance with Francesco Grimani Terminations from the census that is without any doubt part of Grimani's agrarian law from 1756. Additionally, the comparison (and discordance) of the methodologies with other different cadastral records from the Vendramin survey, as well as the accordance of data with the terminations of the Grimani agrarian law (1756) confirm dating the source in the period of 1756-60.

Defining the area

Grimani cadastral records for the interior Dalmatian Zagora refer to villages of Mirillovich Sup. and Inf. as well as to Mirillovich Sup. with the Investitures. As there are two different documents for the villages under the same name that additionally cannot be found under those names in later population censuses the question of defining the area was opened. Although the part of the record referring to the villages of Mirillovich Sup. and Inf. contains a corresponding map; the Grimani cadastral map has no coordinates, no relief presentation or hydrography as the clues for the orientation.

The precise definition of the area have been acquired after the complex analysis of both, the cadastral census and the map, present-day topographical map of the 1:25 000 scale, through a number of elements: family names in the cadastre and present patronymic villages; certain characteristic elements of the natural environment like named hills, water sources, both from the map and the census.

The Mirillovich Sup. and Inf. presented on the cadastral map refers to the present village of the Mirlović Zagora with two accompanying hamlets of Podumci and Ostrograšica, situated in central Dalmatian Zagora. The other village under the name of Mirillovich Sup. (with corresponding Investitures) refers to the present village of Mirlović Polje, placed on the Svilaja mountain slope by torrent Čikola, on the north of Petrovo polje. Those villages are found under the present names just a hundred years later in the first official population census from 1857.

Methodology of the cadastral record

Venetian cadastral records contain mostly two integral parts: the *cadastral map* and the *cadastral census*, although not all of them are completely preserved in that way. The cadastral content determines various types of data, such as *textual, graphic* and *numerical* data. Different cadastral surveys in 18-century Dalmatia employed different methodologies. The basic difference between two main surveys is in the number of recorded categories

Fig.1. Land parcel in the Grimani cadastral map with the property description
Sl. 1. Zemljišna čestica na Grimanijevoj katastarskoj karti s opisom vlasništva

of information. The Vendramin cadastre from the beginning of the century offers much more information categories than the Grimani cadastre half a century later. It contains land quantity and structure data, population data (certain variety of age -sex structure) and livestock structure (Omašić, 1974). Grimani cadastre, on the contrary, records merely the land quantity and the number of household members. In addition, the way the content of the cadastral census is organized is different. Cadastral maps of the two surveys differ as well. Vendramin cadastre map has the relief presentation, cadastral units boundaries, and the boundaries of the old and new acquisition, all that the Grimani cadastral map have not. It shows just land tenure layout. Unlike the Austrian cadastre some 30 years later that shows all the content of the area as a detailed plan, including the land use structure, land fragments in the Grimani cadastral map are marked exclusively in relation to the tenant.

Surface unit used in both cadastres is *Campo Padovano*, divided in 4 *Quarti* and each of them in 210 *Tavole*. Apart from the autochthonous measures, it is the most common and well-known square measure in Dalmatia, presumably taken from Italy. One Campo Padovano is equivalent to 3 655 m^2 (0,36 ha). Consequently, the map scale is expressed in *Pertiche Padovane*. Pertiche, as a linear measure, is also a very common measure in Dalmatia, but having different values in different areas. In this particular region of central Dalmatia the metric value of 1 PP is estimated to be about 2,1 m (1 $PP^2 = 4,3\ m^2$) (Ungarov, 1951; Herkov, 1977).

Graphic data

Cadastral map itself is a graphic data source. The main elements in analysis can be classified in two groups: *toponymy* from the cadastral map (as well as from the census), and the *graphic symbols*.

The importance of toponymy for historical-geographical and environmental-historical research, notably in reconstruction of geographical environment and in historical-demographical studies is well known. In our research, the geographic semantic toponyms[3] are of unique value.

Among the semantic toponyms on the Grimani cadastral map it was possible to define three groups: hydronyms, morphonyms and oikonyms. All of them are either appellatives in the linguistic sense[4] or patronymic oikonyms and both of them are considered as the best keepers of the original distinctive traits and the meaning of the area (Pavić 1980).

Apart from the graphic presentation of the land tenure parcels, there is not much graphic inventory on the Grimani cadastral map. The only relief and hydrographic elements are karst hums and the important water sources. Small houses indicate the villages. Graphic symbols denote the *content* of the area at a certain extent. They can be classified in two groups: symbols that mark elements of natural environment and those that mark elements of human environment. But, equally important is the *position* of elements and their *extension* on the map.

Comparing basic preserved elements from the cadastral map with the present-day topographical map, after leveling the scales, it was found that the location of patronymic hamlets, church, paths, hums and major karst fans is entirely in accordance. Consequently, the Grimani cadastral map can be considered as a precise and reliable document of the time, and therefore it can enable tracing the changes that occurred in the course of centuries.

Textual data

Cadastral census and the corresponding Investitures are the sources of the textual data. One of the valuable textual parts of the cadastre is the land-fragment border description. It comprises description of tenure borders with other tenants and, in a case that there is no other tenure bordering, the description of the characteristic environmental features. Those are very important information for the environmental picture that is not indicated on the map and therefore they are used for the analysis of the environmental characteristics of the area.

Investitures, as a textual document, regulate the agrarian relations according to the new Grimani agrarian law. Family names data enable the research of migration processes and the origin of patronymic villages as well.

Numerical data

The cadastral numerical data refer to the population data, precisely to the number of families, family size, and thus the number of inhabitants as well as land tenure size and property structure. On the basis of those direct numerical data a number of indirect indicators can be expressed. Those are mainly: average family size, physiological density, quantity of land per capita, land parcel average size, the relative frequency of land parcel size and the level of fragmentation.

ANALYSIS

En evidence for the environment

One of the valuable textual parts of the Grimani cadastre is the land fragment – border description. It comprises description of borders with other tenants and in a case that there is no other tenure bordering, the description of the characteristic environmental features. Those latter descriptions were used for the analysis of the environmental characteristics of the area. The analysis pointed out that all the area, apart from the arable, is a pasture with some rocky karst.

The expressions that mark the features of the natural environment have been classified in the 11 basic categories, denoting the prevalent environmental characteristic (Tab.1.) The first significant indicator is the number of different expressions for the same feature. It shows that the most numerous expressions are found for the most common features or the most important features in the karst environment. Those are primarily water sources (5) as the crucial element of subsistence in the karst environment; then comes the rock and the woods as the basic elements of the landscape. The presence of specific karst features like caves and uvalas are also illustrative. The appearance share (%) of basic categories shows the absolute prevalence of rock in both villages.

Tab. 1 Environmental characteristics according to the border description in the Grimani cadastral census
Tab. 1. Karakteristike okoliša prema opisu granica zemljišnih čestica u Grimanijevom katastarskom popisu

Categories	Number of different expressions	Appearance in %	
		MIRLOVIĆ POLJE	MIRLOVIĆ ZAGORA
Pasture	3	2,9	86,1
Mountain	2	19,3	0,8
Rock	4	30,4	11,6
Woods	4	19,7	0
Meadow	1	16,5	0
Water sources	5	1,4	0,9
Torrent	1	7,5	0
Cave	3	0,9	0
Uvala	2	0	0,2
Hill	3	0	0,4
Bush	1	1,4	0

In other categories the villages show different environmental characteristics. Mirlović Zagora is characterized by domination of pastures (86%) in the landscape, while Mirlović Polje in the Svilaja mountain show the mountainous type of the environment through the alternation of mountain, rock, woods and meadows (Fig. 2).

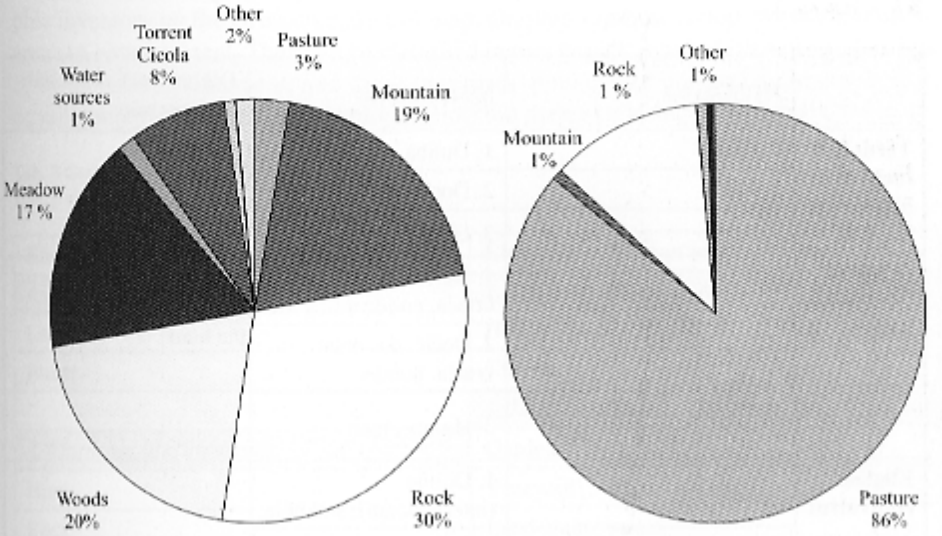

Fig. 2 Environmental characteristics according to the border descriptions in the Grimani cadastral census
Sl. 2. Karakteristike okoliša prema opisu granica zemljišnih čestica u Grimanijevom katastarskom popisu

Although the cadastral map itself, as the graphic data source has not a relief background or any kind of land use description, it points out some elements of the natural environment. The main elements in analyzing the geographical environment can be classified in two groups: *toponymy* from the cadastral map and the census, and the *graphic symbols* from the cadastral map.

The importance of toponymy for historical-geographical and environmental-historical research, notably in reconstruction of geographical environment and in the historical-demographical studies is well known. In our research the geographic semantic toponyms are of unique value.

Among geographic semantic toponyms it was possible to define three groups: hydronyms, morphonyms and oikonyms. All of them are either appellatives in the linguistic sense or patronymic oikonyms, and both of them are considered as the best keepers of the original distinctive traits and the meaning of the area (Pavić 1980). The most important is that all of them point out the specific features of the karst environment. Additionally, most of them are original, Croatian terms for the karst features that entered the international karst terminology (UNESCO 1972).

Some of the toponyms have double or multiple meaning, pointing out the hydrographic, morphologic as well as karstic features of the area at the same time (karst fan, hum, doline), but also in some cases the economic activity, i.e. cattle breeding function (karst fan). Some of the toponyms are found composed, for example Loqua Duliba, that points out the location of the karst fan on the bottom of the doline, i.e. two relief forms at the same time.

Tab. 2 Toponymy
Tab. 2. Toponimija

	Hydronyms	Morphonyms	Oikonyms/Locational; Patronymic
Term in a form that appear on the map	1. Loqua	1. Duliba	1. Podumci
	2. Aqua	2. Dochich	
	3. Bunar	3. Umaz	
Original Croatian term	1. Lokva	1. Duliba, do, dolac, vrtača, ponikva	1. Podumci ⇒ Pod Humci; on the foot of the hum
	2. Voda	2. Dočić, do, dolac, vrtača, ponikv	
	3. Bunar	3. Humac, hum	
English equivalent	1. Karst fan	1. Doline (international); sinkhole	
	2. Water source	2. Doline (international); sinkhole	
	3. Water well	3. Hum (international); hill	
Meaning	1. A. Natural or man-made niche in clayey soil (terra rossa) for the purpose of retaining the precipitation water as the water supply point for cattle, or even for the population in the water famine; More frequent meaning in Dinaric karst. B. Marsh or swamp formed by plants overgrowing a karst lake;	1. Doline	1. Pointing out the location; Village situated on the foot of the hum (hill);
	2. Water source generally	2. Doline	
	3. Man-made water well	3. Rounded, conical, isolated, residual hill of limestone	

The analysis of the toponymy indicates at the first place on the karst environment and its implications such as typical karst relief forms and their specific usage in the everyday life; particularly the water famine, so characteristic to the karst environment due to the specific Mediterranean climate conditions and the permeability of soil; further, the prevailing economic activity, such as cattle breeding; and the typical location of the settlements at the fringe of the limited arable area (polje or uvala), at the foot of the hum (hill).

Apart from the graphic presentation of the land tenure parcels, there is not much graphic inventory on the Grimani cadastral map. Graphic symbols denote the content of the area at a certain extent. They can be classified in two groups: symbols that mark elements of the natural environment, and those that mark elements of human environment. But, equally important is the position of elements and their extension on the map.

Tab. 3 Graphic symbols
Tab. 3. Grafički simboli

Elements of natural environment	**Elements of human environment**
1. Hydrographic elements	***1. Village settlements***
Loqua	Houses, hamlets
Bunar	Church
	2. Land cultivation
2. Chorographic elements	Garden
Hum	Vineyard
Rock	Land tenure parcel
	3. Cattle breeding
	Cattle enclosure
	Cattle enclosure with cabin

Elements of the natural environment point out clearly the most important features in the karst environment, either the most remarquable forms in the landscape, like hums, or the most important features in subsistence (natural or man-made objects of water usage: karst fan, water well).

Elements of human environment indicate the type and the position of the settlements and the forms of subsistence economy. The villages are composed of the number of small patronymic hamlets, which are preserved until today under the same names. The subsistence economy shows two main activities: land cultivation in the main fertile zone and the herding or cattle breeding that obviously had great importance and share in the subsistence according to the numerous objects of cattle enclosures outside the hamlets and the significant pasture area.

Unlike the hamlets, the relation and the surface share of arable, pasture and forest are changed in the course of the centuries. Comparative analysis of the border description in the cadastral census and the present-day topographical map show that in a course of 250 years the majority of pastures and arable is re-afforest Ted. This is the direct indication of environmental change due to the subsistence economy change and particularly to the process of depopulation and abandoning the land.

Although there is no relief representation, except hums, the land tenure layout clearly determine orographyc and geomorphologic relations. The main arable area is elongated in the longitudinal NW-SE direction, which is the general dinaric direction of the relief units' extension. The arable area correspond to the synclinal zone filled with softer

Eocene conglomerate sediments between the Cretaceous limestone and dolomite higher ground, which is represented by hums with the average value of denivelation of 150 m (250 m – 400 m).

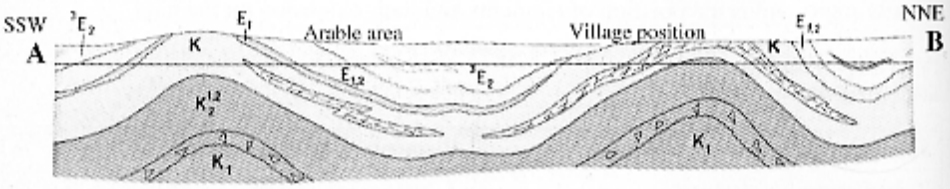

Fig. 3 Geological cross-section in relation to the position of arable area and the villages (Geology according to the Geology of the Sheet Drniš, 1978).
Sl. 3. Geološki presjek u odnosu na položaj obradivog zemljišta i sela

The extension of some natural as well as human elements of the environment is very well in accordance to the relief situation. Water wells and Loquas (karst fan) are located at the contact of the fertile and impermeable zone with the rocky frame. Villages are situated as a rule at the fringe of the fertile polje and at the foot of the hums. Those patterns are found and confirmed as typical in the most of the corresponding types of the karst Mediterranean environment in Dalmatia (Friganović 1961).

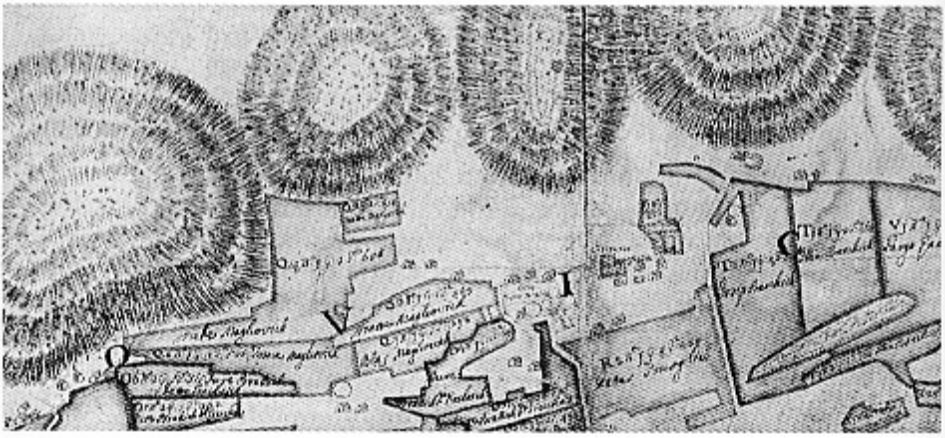

Fig. 4 The pattern of the settlement position (According to the Grimani cadastral map)
Sl. 4. Shema položaja naselja

Population and migration

One of the first open questions that can be pose comes from the title of the cadastre and the name of the villages. As mentioned before, there are two parts of the cadastre Mirillovich for two separate villages. Having same place-names, they are at a good distance one from another. There are several transversal relief forms between them (Petrovo Polje

and Moseć mountain) that make them even more separate. At the latest, a hundred years later they have changed their place-names to Mirlović Zagora (Mirillovich Sup. & Inf.) in the central Dalmatian Zagora and to Mirlović Polje (Mirillovich Sup.) on the Svilaja mountain slope by torrent Čikola, on the north of Petrovo polje.

According to the names of its inhabitants and due to the fact that it has the catholic church ("St. Maria") and a parish ("Parroco Latino"), the village Mirlović Zagora in the central Dalmatian Zagora is dominantly catholic. On the contrary, the village Mirlović Polje on the north of Petrovo polje is dominantly orthodox. The area of Petrovo polje has been depopulated during the insecurity of the borderland. The direction of migrations has been predominantly E, SE – W, NW. Whether Mirlović Polje was depopulated in those times and repopulated or colonized after peace treaties with new orthodox Morlacchi population, while the "old" catholic Mirlović inhabitants moved westward, across Polje and Moseć to the new location in central Zagora, transferring the name of the village – is still an open question.

The cadastral numerical data (Tab. 4.) reveal that both villages Mirlović Polje (257) and Zagora (753) are very well inhabited during the 18-century, and even represent rather huge villages, notably Mirlović Zagora. The comparison with the villages of the Territory of Knin (1710) where even almost 50% of settlements have less than 100 inhabitants (Vino Inf., 69) shows a remarquable difference.

The average family size of 9 members shows that the18 century Zagora family was very numerous. The values are equal in Knin as well as in Mirlović, and at the beginning of the 18-century, immediately after the S. Karlovci peace treaty, as well as in the middle of the century. Numerous families are one of the distinctive traits of the entire Dalmatian Zagora in those times (Friganović 1961, Matas 1993).

Quantity of land per capita, usually very good indicator, has completely different sense here. The quantity of land per capita, everywhere in Mirlović the same – 2 Campi Padovani, is the consequence of the agrarian law within the frame of the Grimani agrarian operations on the territory of the New Acquisition. The cadastre notices that in a case that there was not enough land in the village, the family got the rest of the land, according to the "equation 2 Campi per capita" in the other village. Usually it was at the fringe of the Petrovo polje (Ottavize, Badagn, Umiglianovich). The comparison of the indicator with Knin some 50 years earlier, in the frames of Vendramin cadastral survey, shows different system of land repartition at the beginning of the century.

The average size of land tenures in whole is less than 10 ha, that classifies them as very small tenures (Crkvenčić, Malić 1988) even in the contemporary circumstances. The physiological density[5] shows very high values and considerable regional difference between Mirlović ($\approx$ 140) and Knin (22,5). It is mostly the result of different pattern of occupancy, inheritance, agrarian operations and agrarian legal system and policy, as well as the environmental characteristics. There is a considerable difference between the area of upper Krka river karst poljes in the Territory of Knin and the rocky – pasture environment in the area of Mirlović Zagora. The physiological density value has different ponder in different circumstances and in different land use system. The pressure on the land is even stronger in the conditions of autarchic polyculture subsistence.

Tab. 4 18 Century Dalmatian Zagora: Population indicators (according to the cadastral surveys data)
Tab. 4. Dalmatinska Zagora u 18 st.: populacijski pokazatelji (prema katastarskim podacima)

Area/settlements	Number of inhabitants	Number of tenants	Average family size
Knin 1710.			
Sfverinaz	95	14	6,8
Raggie	166	23	7,2
Vidoglie	239	32	7,5
Tepliu	94	8	11,7
Siverich	287	32	9,0
Vino Inf.	69	6	11,5
Civiliani	242	28	8,6
Cosove	110	16	6,9
Total Knin	1302	159	8,2
Mirillovich 1751. /1760.			
Mirillovich Sup. / Zagora	434	48	9,0
Mirillovich Inf. / Zagora	319	32	10,0
Total Mirillovich Zagora	753	80	9,4
Mirillovich Inf. / Polje	257	29	8,9

Cultural landscape

The basic elements of the rural landscape are the type of the rural settlement and the field system, which are very closely related, and therefore often named after the specific type of the field system (Crkvenčić, Malić 1988, Butlin 1993). According to the cadastral map of Mirlović Zagora the rural landscape can be defined as the open field, characterized by the irregular, patronymic village settlements or hamlets with dispersed or scattered land tenure fragments in strips and square plots and strips. It is mainly related to the autarchic polyculture subsistence, combined with grazing of animals, and in the Mediterranean type of the environment with the practice of transhumance (Rogić 1957, 1958; Friganović 1961). The type of the irregular village settlements and patronymic hamlets is usually related to the rural social structure. The society is socially and economically closed because it is based on the autarchic subsistence.

The Mediterranean environment reflects specific topographic and climatic variation. The three topographic elements were and still are the plains, mountains and hills, matched in the system of agrarian production by a respective emphasis on arable, grazing (particularly for sheep and goats), and woodland (Friganović 1961, 82, 96; Butlin 1993). The relation between these three types of land was never fixed, the tendency being for increases in arable and pasture to be at the expense of woodland (Butlin 1993, 175). An additional important characteristic of this region was the growth of tree- and shrub-crops, including the olive,

the vine, the fig and the citrus fruit together with almond and chestnuts. The Venetian agrarian policy in Zagora particularly emphasized the growth of tree-crops (olives) that was implemented as the obligation in the Investitures ("4 olive trees").

The average size of the land parcel (fragment) is between 1 – 3 Campi Padovani, expressed in hectares, from 0,35 – 1 ha. The distribution of the parcel size frequency shows the highest frequency of the smallest land parcels in general (Fig. 5). The highest level of land fragmentation is found in Mirlović Zagora. The open field system with scattered parcels that are additionally rather small in size is mostly the sign of the old and and spontaneous occupancy, landownership and agrarian relations.

However, the Investitures, according to the agrarian legal system on the territory of the New Acquisition regulate the questions of property and dispositions. The land was the property of State, and the tenants were not supposed to change, divide or sell it in any

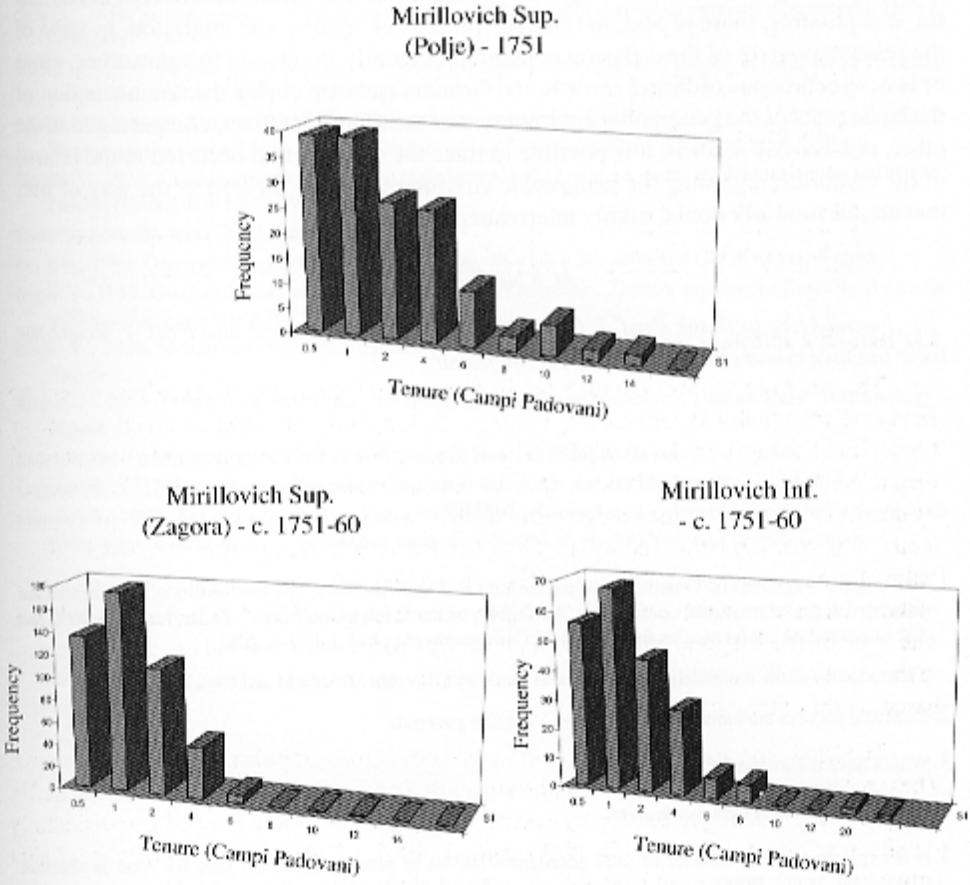

Fig. 5 Tenure size frequency
Sl. 5. Frekvencija veličine zemljišnih čestica

way or in any case. So, the level of dispersion and fragmentation of parcels cannot be mainly the consequence of dividing families and land, but most probably, primarily the consequence of the (un) possibilities of the micro-environmental conditions.

IN A PLACE OF A CONCLUSION

The 18-century Venetian cadastral records, although applying different methodologies, enabled to trace and reconstruct the elements of natural environment (relief, soil, vegetation, water sources), as well as to trace the elements of human environment in Central Dalmatia, precisely the cultural landscape (settlements, rural landscape), in particular the positioning of settlements in relation to the defined elements of natural environment. Those relations enable to determine the way of life and the subsistence of the population of the time and to trace the environmental change.

Depending on the methodology of two main 18-century cadastral surveys in Dalmatia, it is possible, more or less, to trace the process of settling and migration. In spite of the relative poverty of the cadastral content, particularly in relation to some other, more or less, synchronous cadastral records, the Grimani cadastre enable the reconstruction of the basic traits of the geographic environment of the time. Moreover, comparing to some other, present-day records, it is possible to trace the changes that occurred in the course of the centuries, regarding the geographic environment itself, as well as the way of life, that are, beyond any doubt, highly interrelated.

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NOTES

1. The original fragments of Venetian cadastre are kept in Zadar Archives. The first results of the research are presented at the international conferences "Ecohistory of the Triplex Confinium", Zadar, May 3-5, 2000 and 19th International conference on the History of Cartography, Madrid, July 1-6, 2001.

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2. Cadastral surveys are named after the actual Venetian governor.

3. Which have maintained semantic meaning.

4. Named after some geographic feature.

5. It is expressed by the number of total population/100 ha of potentially useful land for food production (Crkvenčić, Malić, 1988)

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SAŽETAK

Mletački katastar u istraživanju okoliša, stanovništva i kulturnog pejsaža Dalmacije 18. stoljeća

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Proširenje teritorija pod mletačkom upravom u dublje dalmatinsko zaleđe u 18. stoljeću iniciralo je nove agrarne odnose u okviru "agrarnih operacija", kao i novu politiku podjele zemlje. Agrarne operacije pratila je izrada katastra, koji je, uvažavajući metodološke razlike, uključivao katastarski popis i katastarsku kartu. U 18. stoljeću poznate su dvije glavne katastarske izmjere dalmatinskog područja; prva je ostvarena početkom 18. stoljeća, od 1709.-1711. (Vendramin katastar), a druga u okviru Grimanijevog agrarnog zakona, od 1756.-1760. Sam sadržaj katastra određuje i različite tipove podataka: tekstualne, grafičke i numeričke.

Katastarska karta je grafički izvor podataka. Glavni elementi analize mogu se svrstati u dvije grupe: toponimija i grafički simboli. Grafički simboli određuju sadržaj prostora do izvjesne mjere. Oni mogu biti dvojaki – simboli koji označavaju elemente prirodne sredine, te simboli koji označavaju elemente društvene sredine. Međutim, jednako su važni položaj i pružanje elemenata na karti. Katastarski popis i odgovarajuće Investiture (dokumenti o podjeli zemlje) izvori su tekstualnih podataka. Investiture reguliraju agrarne odnose prema Grimanijevom agrarnom zakonu. Podaci o prezimenima omogućuju istraživanja migracijskih procesa i podrijetla patronimičkih naselja.

Katastarski numerički podaci odnose se na podatke o stanovništvu, posebno na broj obitelji, veličinu obitelji, pa shodno tome i broj stanovnika, te veličinu i vlasničku strukturu zemlje.

Analiza mletačkog katastra kao izvora za istraživanje okoliša, stanovništva i kulturnog pejsaža Dalmatinske Zagore u 18. stoljeću pokazala je: 1. Osnovno obilježje okoliša Dalmacije u 18, stoljeću je, osim površina obradive zemlje, prevladavnje pašnjaka i stjenovitog krša. Komparativna analiza katastarskih podataka i suvremenih topografskih karata pokazala je da je tijekom zadnjih 250 godina na glavnini pašnjačkih površina i obradive zemlje proširena šumska vegtacija. To je izravna indikacija promjene okoliša kao posljedice promjene tipa egzistencijalnog gospodarstva, a posebno procesa depopulacije i napuštanja zemlje; 2. Seoska naselja Dalmatinske Zagore u 18. stoljeću općenito su dobro naseljena, a prosječna veličina obitelji je vrlo visoka (9); Agrarni pejsaž može se definirati kao podvrsta pejsaža otvorenih polja sa nepravilnim patronimičkim naseljima i zaseocima, te raspršenim zemljišnim česticama u agrarnom prostoru. Ovakav tip pejsaža uglavnom je povezan s autarkičnom polikulturnom proizvodnjom. Međutim, visoki stupanj fragmentacije zemljišnih čestica nije posljedica odmaklog procesa dijeljenja obitelji uslijed dugotrajne stabilizirane naseljenosti, već rezultat pretežno (ne)mogućnosti mikro-uvjeta prirodne krške sredine.

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