

THE OTTOMAN *TAHRİR DEFTERS* AS A SOURCE FOR HISTORICAL GEOGRAPHY*

OSMAN GÜMÜŞÇÜ**

Introduction

Theoretically and methodologically historical geography studies in the west have reached their peak. However, these studies are lagging behind in developing countries such as Turkey. In fact, as Hamshere asserts for the case of England (1987: 46-47), the data relevant for historical geography research in all the remnant countries of the Ottoman Empire are so immense that the quantity of documents kept in archives reaches alarming amounts. This is exemplified by Faroqhi who emphasized the significance of the variety and abundance of the Ottoman Archival sources in her book (1999: 1-109).

From its earliest times, the Ottoman Empire produced large amounts of documents for the purpose of bureaucratic traditions, taxation and military recruitment. Most of these documents are preserved in the Ottoman Archives in Turkey and the amount of documents known to exist is approximately a hundred and fifty million sheets - three hundred thousand *defters* (Genç, 2000). The oldest, the most specific, and probably the most significant amongst the mentioned is the *tahrir defters*. These are the most reliable sources prepared, not only for present-day Turkey, but also for countries where the *timar* system (Barkan, 1974) was applied-for example, Anatolia, the Balkans/Rumelia, Caucasus, Iraq, Syria, Jordan, and the Palestine.

The use of these *defters* in studies on history and economic history goes back to the pioneering studies of Barkan (1940-41: 20-59 and 214-247) in 1940s. *Tahrir* studies then developed to such an extent that they are now defined as '*defterology*'. Even so, Lowry, a leading *defterologist*, differentiates four distinct schools in his studies on *tahrir defters*: (i) the

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Hungarian school, (ii) the Barkan-Braudelian school, (iii) the Turkish school, and (iv) the French school (1992: 3-18).

In studies based on *tahrir defters* a vast region including present-day Turkey, Hungary, Slovakia, Bulgaria, Greece, Romania, Albania, Ukraine, Crimea, Iraq, Syria, Palestine, Israel, Georgia, Armenia, and Azerbaijan (Gürbüz, 2001) has been subjected to investigation; (Bahar, 1996). Due to this development, the number of studies on *tahrir defters*, especially those produced by historians, has increased. But unfortunately, with very few exceptions, such as W. D. Hütteroth (1968) and M. Elibüyük (1990), historical geographers have made little use of these sources.

Unlike *şer'iyye sicilleri/sharia court records*, which offer sporadic information for particular circumstances, the *tahrir defters* present statistical data of all settlements in a region. As is well-known, these enable us to make spatial distribution maps, which constitute the main elements of many geographical studies in the field (Hamshere, 1987).

As Butlin emphasized, methodological progress in historical geography is only possible with the use of new sources, re-assessment of the known sources and new analytical techniques (1993: 49). Thus, this article will attempt to analyze the use of *tahrir defters* as sources for historical geography—a goal that encompasses a wide area that has so far been insufficiently dealt with in this respect (Gümüüşcü, 2002).

Tahrir and Its Process

States with strong central administration wanted to know all the aspects of the territories under their rule in order to assess their own political strength. For this reason, various surveys had been made to determine the total population, the land owned, and the amount of tax allocated in other countries. Before the Ottomans, the Seljukids were also known to have made surveys to determine the number of people and their wealth, although these *defters* do not exist today (Gümüüşcü, 2001). When considering places outside of the Ottoman territories, similar censuses and surveys were executed in England, Europe (Holt, 1987), and the Mediterranean world (Çiçek, 1993).

In this case, it is understood that the Ottomans simply carried through the methods and traditions handed down from former Turco-Islamic states, rather than introducing a system of their own invention (Barkan, 1940). The Ottomans initiated the *tahrirs/surveys* even in the earlier period,

thereby maintaining the heritage of previous states and elaborating on it (Barkan, 1940). In fact, in his study on hundreds of *defters*, Barkan states that nearly all the regions included the outcome of the previous *tahrirs* (from the recent to former) as 'atik/recent', 'köhne/former', 'kadim or akdem/earlier' *defters* (Barkan, 1940). These *tahrir* records were extracted from the earliest era during the transition of every sultanate or when deemed necessary (Genç, 2000).

In dictionaries, *tahrir* is defined as 'a writing, the act of writing, a registering'. In practice, however, the Ottoman Empire at times obtained 'statistical' data with the intention of designating and determining the figures obtained from land ownership and the amount of tax allocated from the newly conquered territories from their own land. The empire then gave the name *tahrir* for the action, *tahrir defter* for the *defters* where the data are recorded (Afyoncu, 1997). This being the case, it is possible to assimilate *tahrir* into today's general meaning of census and statistics.

Immediately after a conquest, a *tahrir* is executed (İnalçık, 1954b) to officially establish Ottoman sovereignty (İnalçık, 1994) and to carry through the two-digit system (İnalçık, 1954a). For this purpose, an official known as a '*tahrir emini/muharrir-i vilayet*' or '*il yazıcı*' is sent to designate the income sources, or, if need be, to reveal new revenue sources. A *katib* accompanying to the *emin* enforce the record transaction concerning the *tahrirs*. Thus, depending on the size of the area to be surveyed, more than two officials were commissioned and went by as *tahrir* commission. Receiving the necessary orders and information from the central government, they were joined by the *kadi* of the administrative unit and thus the work was carried out. If considered necessary, they were also accompanied by armed guards in order to ensure security. The *tahrir* was renewed every 20-30 years according to traditions, after the initial one or whenever there was an evident variation in the tax revenue. In establishing the *timar* system, the government had to determine all the needs or types of revenue sources in detail of the *eyalet/vilayet/province* in order to achieve a systematic and continual central supervision (İnalçık, 2003). Beneficial and systematic *tahrirs* were vital to ensure the endurance of the *timar* system as the dominant military force of the Empire. As the outcome of these *tahrirs*, the new and increased income was gathered to form new *timars* or added into the *sultan's has/royal domain* in order to increase government revenue. Thus, it was more worthwhile for the government to execute the *tahrirs* at a time when growth in population and income occurred (Afyoncu, 1997).

The *tahrir* commission at first would go to the administrative centre of the *sancak/livas*/sub-province and then consecutively continue their *tahrirs* in other administrative units of the *sancak*. During *tahrir*, the commission would personally meet all the male adults and their adolescent sons. The amount and ratio of revenues allocated from the assets and services was determined during this time, and the *tahrir* results were recorded in a *defter*. With the finalization of the first phase, the *defter* was sent to Istanbul to be presented to the Sultan. After the required examinations, the Sultan would approve and seal the *defter*. Thus the completed *defter* would be copied, and the copied version would be preserved for reference at the *Defter-i Hakani* or *Defterhane-i Amire* (the archives in which all registers revenues are preserved) (Barkan, 1965). The sealed *defter* would be sent back to the *sancak* where the *tahrir* was executed, which is known as *mufassal defter*. After the completion of *mufassal defters*, two additional *defters* would be prepared with an equivalent process. The first of the two was *icmal/idmall defters* where the *dirlilik* (the state land given to farmers/villagers to cultivate) and mostly the selected *sipahi/timariots* were conferred and recorded. The other was the *evkaf defters*, which covered *wakf* foundations established for charitable institutions and public service. Briefly, the former includes detailed descriptions of settlements, population, land and taxes, while the latter is only concerned with the allocation of the revenues and indicates simply the name of the settlement, the amount of income derived from it, and the name of the holder of the income. *Evkaf defters* include all of *wakf* charity/pious foundations. Additionally, the *mufassal defters* records in its initial pages include a law code (*sancak kanunnamesi*) for the province concerned, which varies from one province to another.

Tahrir defters are also written documents of all males eligible for taxation. These males are listed under their fathers' names and the sub-province's cities, towns, villages, *mezraa* (temporary/seasonal dwellings used for agricultural purposes) or any other forms of settlement they live in. In fact, three types of *tahrir defters* were prepared at the same time (as mentioned above): (i) *mufassal* (detailed) *defters*, (ii) *icmal* (summary) *defters*, and (iii) *wakf defters* (*wakf* as mosque, *mescid*/small mosque, *medrese*/theological high school, water conduit, bridge, fountains, etc.). *Tahrir defters*, in which the taxes of the entire settled and nomadic population's agricultural, livestock, industrial and service sectors are recorded are such an important source for historical geographers that they deserve separate, broad-scaled scholarly investigation.

With the aid of the statistical lists for a settlement, a bureaucrat located in the centre could know the number of people in various status, amount of land owned by each person, and the quantity and price of what they produced in any village of a *sancak*, and he could make proper decisions. In other words, *tahrir* produced according to *sancak*, *kaza* (district), and *nahiye* (sub-district) makes an important administrative unit for the centralist bureaucratic administration. Certain models, abbreviations, and reference models were developed during the making of the detailed lists, and created a complex book-keeping system. In brief, *tahrir defters* and *defter-i hakani* systems constitute an authentic statistical and book-keeping system, which provides accurate and extensive data when applied to a specific administrative system (İnalçık, 2000).

These *defters* occasionally issued data pertaining to the pre-Ottoman era, and expressions such as '*adet-i kadime*/customs from the olden times' show that the Ottoman administration had not changed the previous jurisdiction much. Apart from *tahrir defters*, a vast section of the *kanunname* records are crucial in understanding the pre-Ottoman environment (Arıkan, 1988). Thus, for any location, the *mufassal tahrir defters*, which were prepared immediately after the conquest, would give significant information on the condition of the area before the Ottomans, such as, the administrative divisions or settlement dates (Yediyıldız, 1985). Further, the phrases used within the *tahrir defters* were derived from the social, political and economic structures existing hundreds years before the Ottomans. For this reason, the Ottoman *tahrir* system not only carries Turco-Muslim influences, but also reflects the social and economic values of the regime before the Ottomans in the Balkans, Adriatic Coasts, and the Aegean Islands (Barkan, 1943).

Data Classification

Following this general information and considering the research done so far, it is possible to make various classifications of the data obtained from the *tahrir defters*. In terms of formal structure, the data can be divided into two sections: (i) 'Standard' data encountered in all *tahrir defters*, and (ii) 'Coincidental' data encountered only in some special circumstances that require further explanations. This second type of data varies according to region, subject, and time, as well as the interest, knowledge and experience of the commission preparing the *tahrir defter*. When we take into account its broader meaning, it is possible to consider the former 'standard' as 'quantitative' and the latter 'coincidental' as 'qualitative' data. We should

point out that all the data found in *tahrirs* are unique, and it would be hard to favor one over the other (Heywood, 1988).

The data pertaining to the Standard group generally constitute factual information, which does not change on a regional basis and meets the minimal requirements for making *tahrirs*. This data includes detailed records of names of all household heads and bachelors in all settlement centres, together with patronyms and the amount of land held by them (which were in fact used on a kind of hereditary basis from father to sons) as well as the estimated sums of tax on agricultural products in money and/or in kind. Also recorded under each settlement were the approximate sums of money collected from taxes such as *ösür* "tithe", the *çift resmi*. (literally, "pair of oxen"; it referred to a certain amount of land cultivated by a family with a pair of oxen, the size of which changed according to the quality of the soil between 60 and 150 acres, a *dönüm* being 940 sqm.), the 'ispençe/ispendje' (collected in cash from non-Muslims in place of the *çift*-tax), fines (namely from offences/crimes), and matrimonial taxes. In consequence, we find for each settlement an approximate amount of income to be paid by its tax-paying inhabitants.

As for the coincidental group, we find information that varies depending on the knowledge and capability of the *il yazıcı*/surveyor, the regional circumstances, and the time. Under this group we may consider such situations as tax exemption obtained in return for various services or on the basis of some kind of status, extraordinary events or developments, explanatory notes, and finally some new practices and rights. For example, we find a statement in the Teke/Antalya *defter* dating to 1588 (TK 107) which reads as follows: "(Çiftlik-i Borakilisa), mezbur Borakilisa iki dönüm bağ ve altı dönüm yerleri vardır, dört günde bir su tutarlar "the Borakilisa farm owns 2 acres of vineyard and six acres of land which is irrigated once every four days". For the purposes of this article we may classify the data, taking the qualitative aspects into primary consideration, according to the traditional geographical classification in the following way: (i) data on physical geography, (ii) data on human geography.

1- Data on Physical Geography

Physical geography contains elements existing in nature that are unchanged by mankind but affect human existence directly. Those who know *tahrir defter*s might initially think that there are no data in them pertaining to physical geography, but, as will be seen below, some information does exist.

Although the *tahrir defters* provide considerable information for geographical studies, especially on topics related to human geography, they do not seem as rich in information on physical geography. Nonetheless, there is indirect information in the *tahrir defters* particularly on natural vegetation. Phrases like “*kuhiden tarla açmak, kuhi ve ormanlar açılıb ziraat olınsa, genden tarla açmak, balta ile yer açmak, balta ile tarla açmak, gen sökmek, balta yeri, balta ile çayır açmak, baltalık, baltası yeridir, kendü açtığı yerler*” (Cook, 1972), indicate places that were subjected to some kind of interference on the environment that resulted in the destruction of natural vegetation and forests. As an example, we find the phrase of “deforested area” and “depastured area” in the records, for instance, in 24 of 85 villages and *mezraas* in İnegöl *kaza* and 37 of 210 villages and *mezraas* subdivisions of Beypazarı (Barkan-Meriçli, 1988). Again, in the TT 37, TT 54 and especially TK 34 *defters* of the Canik *sancak*, we encounter cases of so-called ‘axed areas’ (i.e. cleared lands) (Öz, 1999). In the same context we should mention the *koru resmi* (the grove tax), which indicates the existence of forests wherever it was levied. Thus, we can not only establish the existence of natural vegetation such as forests and bushes in places where there is no sign of them today, but we can also determine how they were destroyed by mankind for the extension of agricultural lands.

Data on the hydrography of some regions is also recorded within the *defters*. For example, the records of *suğla*/marshy land (Gümüşçi, 2001) in the records of the Karaman province provide information on ponds and marshes in that area. Since most of these marshy lands no longer exist, we are able to establish that they were desiccated over time. Further, some clues can be obtained on the useable water sources of a region due to the records of ‘*resm-i sarnıç*/cistern tax’ (Karaca, 2002).

There is also information in the *tahrir defters* pertaining to wild animals and their habitat, though this information is indirect. In particular, tax records relating to specific groups provide crucial clues to the interaction between humans and animals. This includes references to ‘*kaplançı*/catchers and breeders of tigers’, ‘*avşakçı*/those catching lynx’ (Erdoğan, 1998), “*atmaca*/sparrow hawks, *çakır*/merlins, *balaban*/goshawks, *atmaca virür*/sparrow hawk keeper, *kartal*/eagle, *doğançı* or *şahinci*/falconer, *avcı* or *sarıyad*/hunter, *kayacı*/golden eagle keeper, *yuvacı*/nest keeper, *yavrucu*/breeder, *resm-i aşiyanha*/nest tax” (Acun, 1993). Thanks to these records one can make informed guesses on the species and location of

these birds and animals as well as obtain knowledge of the past existence of their natural habitat in the regions studied.

2- Data on Human Geography

Human geography generally involves such topics as population, settlements, administrative structure, and activities that help communities to earn their livelihood like agriculture, animal husbandry, mining, fishing, industry and services. Because the basic reason for the preparation of *tahrir defters* was to ascertain the total estimated amount of tax-revenue of the state, along with the number of tax-payers in the population, these *defters* provide a great deal of data for studying human geography.

The Ottoman administration tried to increase its income as much as possible in order to strengthen and maintain the state. It is for this reason that all kinds of economic activities were recorded in the *defters* so as to minimize tax losses. Pursuing this objective, all the settlement centres where the *timar* system was applied were visited by the survey commission. In each of these centres, all males eligible for taxation and all activities with some commercial value were recorded in the *tahrir* registers. Thus, it is possible to establish from these *defters*, even in the smallest settlement units, the density, decrease, increase or destruction of population and economic activities within a given territory. In cases where we have a series of *defters* for a district, it is possible to observe general changes and developments in the population and economic structure during the time span covered by the registers.

a- Settlement data

Because the population and their production activities within the *timar* system were sources of income for the state, as the foundation for Ottoman military, political and financial structures in its classical age (1300-1600), the Ottomans took utmost care to keep *defters* of all settlement centres. Hence, every adult male with *reaya* status, whether living in a city or in a mountainous village, was subjected to taxation. In fact, if any unregistered place or group or income source (*hariç-iz defter*) was discovered during or after a *tahrir*, they were ordered to be surveyed later. In this respect, the meticulously prepared *defters* make it possible for us to make detailed studies of distribution, as mentioned above. Of course, it is essential to identify extinct settlement centres, if we are to attain the dispersal of compiled data through the 'localization' of settlement centres of an area (Gümüüşçü, 2001).

In *mufassal defters*, the names of settlement centres were always given together with terms defining their functions and indicating the type of settlement, e.g., *nefs-i Konya*, *karye-i Sarıkaya*, *mezraa-yı Üçbaşlı* and *yaylak-ı Aydoğdu*. Here, the word 'nefs' (lit. 'the soul, the thing itself') gives not only the meaning of Konya itself, but also the meaning 'city' of Konya as used during that period (this term was also used for the central settlements of sub-district centers, whether they are towns or villages). The word 'karye' is used to express that the settlement functioned as a 'village'. The words *mezra*, *yaylak* and *kışlak* were used to express that these settlements functioned as (mostly) uninhabited agricultural lands, temporary summer pastures, and temporary winter pastures respectively. Changes of the terms preceding the settlement names reflect a modification on the type of the settlements concerned (Gümüüşçü, 2001).

However, these expressions recorded in the *defter* do not always provide us with clear-cut distinctions about settlement types, since we sometimes encounter difficulties in establishing the functions of settlement centres. In particular, we need further data in the *defters* for towns and cities, since specialists have put forth diverging views on what kind of functional features a settlement should possess in order to be defined as a town or city (Faroqhi, 1993). In research encompassing a number of provinces one may find it useful to use population size as the main criteria. In this respect, Faroqhi proposed that a settlement with more than 400 taxpayers can be defined as a town (1979: 104). Other expressions such as "Cuma kılınır ve bazarı durur kasabadır/it is a town where Friday prayer is performed and market place is set up" (Barkan-Meriçli, 1988) found in the registers may also be taken as indicators of the function of that settlement as a town.

If we are in a position to observe an area for a relatively long duration, it becomes possible to establish the changing functions of the settlements concerned. For example, when we take a closer look at the settlements of Budaközü *kaza* (the present-day Çorum-Sungurlu district), we can observe interesting facts. According to the *defter* dated 1530, the settlements *Alembey*, *Bozdepe*, *Derecik*, *Çiçekoğlu*, *İmirlü*, *Mehmed Bey* that had functioned before as 'kışlas' became *mezraas* (IT 387), while according to a *tahrir* executed 29 years later, it is observed that they had acquired the status of *karye* (IT 322). Thus, these settlement centres were originally set up as winter pastures, then became *mezraas*, and finally ended up being as villages.

Another important aspect of the settlements in the *defters* is the variety of constructions, which reflect the social structure existing in settlement centres during that period. In addition to the *mufassal tahrirs*, the *icmal* and *evkaf defters* enable us to develop a picture of most of the buildings in a settlement centre. This kind of information makes it possible to determine the existence of buildings such as mosques, *mescids*, *darül-hatibs/schools* for preachers, *darül-hüffaz/schools* of *hafız* (Qur'an reciters), and those buildings belonging to different dervish orders (*tarikats*) such as *kalenderhanes/hospices* of wandering dervishes, *haydarhanes/houses* of haydari dervishes, *mevlevihanes/convents* of mevlevis. We also encounter such constructions as inns, public baths, and tombs in these centres. Since these buildings carry great importance in the history of art, it also becomes possible for us to acquire a wide range of information on the social, economic and religious structure of the society of that period.

Recording of the names of all settlement centres, including the abandoned ones, together with -wherever applicable - their aliases (*nam-ı diğer*) is extremely important with regard to toponymy (Halasi-Kun, 1982; Gümüşçü, 2002). Thanks to the aliases given together with the names of contemporary settlement centres, it becomes possible to track the location and names of settlements over time (Öz, 1991). Further, by comparing the recorded location of these settlement centres in the *tahrir defters* with modern maps and today's areas, it is usually possible to pinpoint the geomorphological units and elevation level of the settlement, the factors behind its founding (Gümüşçü, 2002), and even the reasons for the disappeared settlements that have not survived to the present day. Then, *tahrirs* include the question of disappeared settlement centers, particularly villages (Gimpel, 1996). As Hütteroth pointed out as early as 1968, this problem can be solved only by studying *tahrirs* and other archival sources pertaining to the seventeenth and eighteenth centuries together. For example, in our study on Larende (present-day Karaman) we have found that 61% of the 16th century settlements have since disappeared (Hütteroth, 1968; Faroqi, 1976).

b- Population data

Since the data in the *tahrir defters* is insufficient and incomplete in comparison to modern censuses, it is impossible to make an evaluation similar to modern population surveys. However, since they offer otherwise unavailable data, their significance cannot be so easily discounted. Therefore, despite their insufficient and incomplete data, it is possible to

use these *defters* in scholarly studies about population (Barkan, 1951-53). The *tahrir defters* should not only be taken as a source for the number of taxpayers, but should also be considered as source for information on those exempted from taxation in return for various services and privileges. Further, the *tahrir defters* provide statistics on the actual adult male population (Barkan, 1951-53), since they contain counts for all males of the ruled and some parts of the ruling class, the blind, the crippled, the bankrupt, the guests, etc.

Since all individuals are recorded with their patronyms in the *mufassal defters*, the data are exceedingly valuable for the field of onomastics. This is because it becomes feasible to identify and analyse the names used, name-giving traditions and trends, and the changes in this regard together with inter-regional distinctions (Kurt, 1996).

Mufassal tahrir defters usually give the adult male-taxpaying population (*nefer*/adult male) in a settlement centre along with the number of tax-paying households (*hane*) there. However, there are instances when only the numbers of the *nefers* are specified. While these *defters* give very detailed information on some matters, they do not provide any information as to the 'total population' of a settlement centre. It was for this reason that various researchers seeking to estimate 'total population' have put forth coefficients for '*nefer*' or '*hane*'. Among these, the multiplication of the coefficient '5' with *hane* has been adopted first by Barkan and then by many others. Darby did exactly the same thing in his research on the Domesday Book; he multiplied the coefficient 5 by the total of households, in order to calculate the total population of England (Butlin, 1993).

After Barkan, some researchers suggested various different coefficients varying from 3 to 7 for one household, while others found it necessary to add 10-15 per cent to the estimated tax-paying population to account for those who were not registered in the *defters* (Erder, 1975). However, all these suggestions have not gone beyond the domain of informed guesses. Nevertheless, the existing *defters* are the sole demographic sources pertaining to the period in question, and they are still used in Ottoman population studies to estimate the size and structure of the overall population (Çiçek, 1995).

With these difficulties in mind, we should base our analysis on the recorded tax-payers, instead of making futile attempts to calculate the total population. Keeping in mind that the number of recorded adult males

represents a certain portion of the population, we may tentatively study such topics as population distribution, population increase, and population movements, as well as the economic and religious characteristics of the population studied. Thus, the subject can be studied in depth by designing detailed maps of the smallest administrative units such as villages or city quarters. Since those recorded in the *defters* constitute only the taxable, free, healthy and adult males above the age of puberty, it is impossible to find out the total sum and characteristics of those left out. However, one can have some idea about the age and health structure of the population, and thus on the population dynamism, from the data available on the elderly, disabled, and ill who were exempted from taxation (Öz, 1991; Emecen, 1991).

It is unusual for the *tahrir defters* to provide information about the ages of the recorded tax-payers. Yet some *defters* compiled on particular occasions determine the age and/or age groups of the individuals. In these cases we may draw some conclusions, though tentative, on the age structure of the population (David, 1977). Furthermore, members of certain groups, in particular the *sipahizadegan* (sons of timariots/cavalrymen), were recorded together with their ages even if they were infants. For example, in the *sancaks* of the Karaman province, the letter '*sad*' (abbreviated form of *sagir*/the little boy) under personal names indicated the sons of sipahis below the age of puberty (Gümüşçü, 2001).

In contrast to the Muslim population, who were unfamiliar with the practice of using surnames, other Ottoman territories with considerable Christian inhabitants (e.g. the Balkans), it is possible to trace population movements, to estimate average family size, and to reconstruct family lineages by means of the surnames recorded in the registers (David, 1999). The *mufassal tahrir defters* are substantial sources in determining personal names, and the religious and ethnic structures of the population. Examining the names of the non-Muslims designated in these *defters* as '*gebran*/infidels' or '*zımni*/the protected' (Kurt, 1993) can be somewhat helpful in guessing their ethnic origins. Thus, a determination can be made on the distinction between Muslims and non-Muslims, and on ethnic origin for each recorded individual (Gümüşçü, 2001).

From the *defter* records, one can obtain information on the social structure of a community and data on distinctive groups such as nomadic groups, tribes and *cemaats* (tribal communities) within the overall society. In particular, there is very detailed information on semi-nomadic people, who

had delicate problems with the sedentary population due to their herds destroying the planted areas. Recorded in these registers are their socio-economic structures as well as data regarding their names, the tribes they belonged to, their numbers, and the locations of their winter and summer pastures (Karaca, 2002).

In addition to these, coincidental data on 'migration', found in the registers in the form of explanatory notes, offer valuable information on population movements. Explanatory notes in connection with personal names demonstrate their home provinces and intended destinations thus provide valuable information on migration (Gümüştü, 2004). It then becomes possible, with the assistance of these data, to find where, at what rate, and to which destination migration would take place. This clearly demonstrates that the *mufassal defters* are an important source in explaining some significant social phenomenon (Emecen, 1991).

These sources also give information about the marital status of the population for the period concerned. They clearly state whether the registrant is 'married or single'. As the '*raiyyet rüsumu*' or the taxes on the subjects would be determined on the basis of the amount of arable land owned by them and their marital status, it is possible to find out the number of married or single individuals. The 'married population' is recorded by the terms of *çift*, *nimçift* and *bennak*, while the 'bachelor population' is termed as *caba* (in some provinces this term indicated married landless peasants) and *mücerred* in the *defters*. The increase or decrease of bachelors tells us about some social and economic developments and problems.

c- Data on administrative divisions

Tahrir defters were prepared according to administrative divisions of the period, but this was generally on a *sancak* or sub-province basis. Even though the overwhelming majority of the *defters* in the archives conform to this pattern, one must not overlook the fact that some *defters* are prepared on an *eyalet* or province basis (Öz, 1991). Thanks to these *defters*, one can designate the boundaries of a variety of units; from the smallest administrative units, (i.e. *karyes*) to *nahiyes*, *kazas*, and finally *sancaks* consisting of several *kazas*. This is not to mention cultivated lands or temporary settlement centres bound to villages such as *mezraa*, *çiftlik*, *yaşlak*, *kışlak*, and *kom*. Thus, relying on the data in these *defters* for the

administrative divisions, one can reach conclusions on the administrative divisions of all the provinces where the *timar* system was applied.

The information in the *tahrir defters* that demonstrates the existence of 'specified boundaries' of villages is also quite important in this regard. Since the smallest administrative units had definite borders, the boundaries of *nahiyes*, *kazas*, *sancaks* and *vilayets* are also determined. Even if one disregards the data on the existence of village boundaries prior to the Ottomans, the borders of villages already existing in accordance with the *timar* system document the presence and penetration of the concept of boundaries for centuries. This demonstrates that every social and economic phase of the period was documented and taken under the pursuit and guarantee of the state (GümüŖçü, 2001). Even today, courts often resort to *tahrir defters* for the adjudication of disputes over village boundaries (Arcak-İmsel, 1970).

According to the results of studies based on *tahrir defters*, the Ottoman state took into consideration the 'natural elements' such as mountains, hills, and rivers in determining administrative boundaries. This means that the state had long-lived administrative boundaries. In contrast to frequent changes on the borders of the largest administrative units (i.e. provinces and sub-provinces), there were no noteworthy modifications on the borders of *kazas* and especially *nahiyes*. In fact, these boundaries have been so stable that most of them have been preserved to the present day (Lowry, 1992).

2- Data on Economic Geography

Human beings perform various economic activities to survive. Whether the activity is a direct or indirect benefit from the land, all economic activities include some form of production. According to the traditional geographical view, it is possible to classify the production activities in three fundamental groups: (i) primary sector, (ii) secondary sector and, (iii) tertiary sector. According to this classification, these data can be dealt with in the following way:

a- Primary sector data

Since the vast majority of the Ottoman population secured their living from agriculture, first and foremost the data on the land system are recorded in considerable detail. By the use in *defter* records of distinctive symbols, the *nefers* were categorized according to the size of their landholdings such as *çift* (farmstead consisting between 60 to 150 *dönüms*), *nim-çift* (half a *çift*) and *bennak* (holder of less than half a *çift*). Landless

persons were designated either as *caba* or *kara*. In the Balkans, designations were also used for *bive* (widows) and *mücerreds* (İnalçık, 1994) (bachelors with no possession of land). Even if the account is only rough, land holders are definitely recorded according to the amount of land in their *usufruct* (all the lands as *çift* or *çiftlik* and as *baştina* in the Balkans) and the status of land use. Thus, we can gain valuable information on some peculiar land systems such as the *malikane-divani* (valid only in certain regions) (Barkan, 1939), in addition to the *miri* (state-owned), freehold property and *wakf* lands. The *malikane-divani* were the means by which the state was ideally able to satisfy the needs of its agents (through *divani* shares) and of the local magnates (through *malikane* shares). However, it should be noted that the actual situation changed over time and from region to region. In conclusion, then, we see that these records provide detailed information about how much land was cultivated for any place as well as what form of cultivation was used. This means that we have gained crucial insights about the agricultural economic structure of the region concerned.

Besides the cultivated land, in the records, all agricultural products recorded individually but tithes on grains were recorded both in kind and in *akçe*, the Ottoman coin. Non-grain products were generally recorded based on the monetary equivalents of the tax-load in *akçe*. In addition to these crop fields, plantations were also recorded because of taxes on vineyards, orchards, hazelnuts, walnuts and so on. Further, when we take a closer look at some statements in *defter* records, it is possible to attain information on the factors organizing agricultural matters—the methods of irrigation, for instance (TK 107). It is possible to understand from the *defters* that people grew a rich variety of products (TT 166), about 40 types as could be determined. Now that only those products with commercial value are recorded (Çiçek, 1995) it could be estimated that there was a much wider variety in products than what is recorded.

In addition to activities related to growing crops, the total number of animals can be determined from the *mufassal defter*, including the number of goats, sheep, buffaloes, donkeys, pigs (in the predominantly Christian Balkans), and bee-hives. We can also determine the estimated amount of taxes collected on animal products (*resm-i ganem/adet-i ağnam*/sheep tax) and bee-hives (*resm-i kovan*/bee-hive tax). On the basis of this data, it is possible to have a rough idea about the approximate numbers of these animals in the villages of a certain region (TT 166). Similar data is found for bee-keeping, which makes it possible to gauge the honey production in

the regions concerned. However, we have no clue in these sources relating to the cattle-breeding. Unlike sheep and goats, there was no direct taxation on cattle, except in the case of sales. This most likely resulted from the heavy reliance on cattle in agricultural activities. Along with the indirect mention of cattle in *kanunnames*/provincial law-codes, the fact that cattle were the only power source suitable for ploughing in Anatolia and the Balkans is enough to demonstrate that cattle were bred by almost every household, though in smaller numbers than sheep and goats. According to one of the very rare counter-examples, the Ottomans recorded with utmost care the cows, calves and bulls owned by non-Muslims in Hüdavendigâr *Liva* (Beldiceanu-Steinherr, 1997).

Another occupation classified within the primary sector was fishing. If a fish was worth something commercially, it was instantly recorded in the *defters*. We come across expressions such as “*öşr-i mahi*/the tithe on fish, *balıkçıyan*/fisherman, *balıklağü*/fishing area, *dalyan*/net enclosure, *dalyan-ı mahi*/fishing net enclosure lake” for the regions where fishing was practised. These kind of notes enable us to designate the regions and the amount of taxes imposed on this activity. This means that it is possible to guess the volume of fishing activities and their long-term circumstances in any given area (Kaldy-Nagy, 1971). In some instances, we can even determine the fishing techniques of an era through the names of fish caught, (e.g. sturgeon, codfish, carp and salmon), and the use of such terms as hanging, salting, desiccating, barrel/cask fish and catching fish by casting nets (TT 370).

Today mining is also considered among the primary sector activities. In this regard, from the records in the *defters* of *memleha*/salt-pans, *zift*/pitch, *katran*/tar, *güherçile*/saltpetre, *küre*/iron, *altın*/gold, *gümüş*/silver, *şab*/alum, *bakır*/copper, *kömür*/coal and the like, we can determine the location and quantity of various mines produced in areas which we have registers for. Certain stipulations of *kanunnames* and similar data in the *tahrirs defters* give important clues about mining and economic life (TT 170).

Because the Ottoman economy was primarily based on agriculture and stockbreeding, taxation in these spheres was treated with great care in the *mufassal defters*. The Ottomans documented the potential agricultural capacity of every region under the *timar* system by recording estimated tax-amounts on animal husbandry and agricultural activities in each permanent and temporary settlement unit. Thus, based on the quantities and prices of the tithes of the crops recorded, it is possible to arrive at

rough figures about the quantities of crops produced in a region and their cash equivalent. More importantly, by trying to calculate medium and long term per *nefer* production, the general course of economic development can be determined for the area under consideration (Gümüşçü, 2001; Öz, 1997). This can be assessed by calculating-on the basis of modern data-per *nefer* consumption figures *per annum*. Thus, we can observe medium and long term changes in the approximate level of welfare of the people in any given area.

b- Secondary sector data

Industrial activities in the Ottoman Empire were carried out in small-scale and labour-intensive enterprises. These activities secured the required power from human and animal sources as well as from water and wind. While they look extremely small compared to the much larger industrial enterprises of our day, they did meet almost all the needs of the era. The *mufassal defters* and *kanunnames* state clearly the number of these small-scale enterprises, the amount of taxes imposed on them, and hence their economic potentials.

Among these enterprises (IT 294) we can cite such work sites as *asiyab*/wind or water mill, *debbağhane*/tannery, *bezirhane*/flax-seed and linseed oil press, *tahunhane*/mill producing halvah, *şemhane*/chandlery, *kirişhane*/manufactory of catgut, *yağhane*/oil mill, *selhane*/slaughter-house, *buzhane*/ice-house, *cebehane*/military storehouse, *boyahane*/dyehouse, *bozahane*/brewery, *serrachhane*/saddlery, *başhane* or *serhane*/green house, *meyhane* or *humhane*/tavern, *şabhane*/alum manufactory, *kassabhane*/butcher's shop, *kiremidlik*/tilery and all kinds of *karhanes* (the general name for workshops). These kinds of enterprises mentioned in the *defters* are quite important, because they give a detailed picture of the economic activities in any given settlement. Setting out from this information, we can determine the economic structures of each city or town in any region as well as the economic relations among the towns of that area.

Further, we can even determine the direction of long-term development of the sector or of the kind of activity under consideration. For example, we find information on ruined mills in the Ankara *defters* dating to 1463, which shows that they stopped functioning some time between the previous survey and the new one. Registration of these ruined or deserted installations was done with a view to protecting the *reaya*, because the Ottoman administration paid special care to maintain public

services through these installations in an orderly and uninterrupted manner (Çınar-Gümüüşcü, 2002).

In the *mufassal tahrir defters* we find, on some occasions, notes below or under the names of the tax-payers, describing their occupations. Categorized under the coincidental data group, they were meticulously noted down in *defters* from the second half of the fifteenth and the beginning of the sixteenth centuries (Lowry, 1992). For example, in the *tahrirs* of the Tokat province dating from 1455 and 1485 there were 163 different occupations recorded. Most of these were craftsmen dealing with textiles, leather work and foodstuffs, with 41% in 1455 and 32% in 1485 working in the 22 different branches of textile production (Şahin-Emecen, 1998). In the 1564 Amid/Diyarbakir *defter*, 3,717 *nefer* out of the recorded town dwellers numbering 6,572 worked in 174 different occupations (TK 155). A thorough examination of this sort of records in the *defters* reveals that we come across around 300 (Barkan-Ayverdi, 1970) different jobs or occupations, which disproves the idea that division of labour and specialisation did not reach significant levels in pre-industrial societies (Sjoberg, 1960). Meanwhile, this sort of labour division and specialisation could also be seen in Medieval Europe; for example, the process of the production of a piece of fabric required 26 different stages, with each stage needing the work of a specialist (Gimpel, 1996).

Such functionaries as *imam*/prayer leader, *muezzin*/caller to prayer, *muhassıl*/tax collectors or student were recorded irrespective of the kind of the settlement. Because of these records, it is possible to build a picture of the economic identity of a city or town by determining the ratio of craftsmen and tradesmen to the total adult male population of any region. In this way it is also probable to partially follow long term trends in the economic life of the region concerned. Moreover, one may also follow the traces of some present-day crafts with a traditional outlook in the *tahrir defters* of the 16th century.

Even in the cases where there is no hint about the professions of the recorded people it is possible to indirectly reach some conclusions, based on data regarding the types and amounts of taxes collected in the city (Gümüüşcü, 2001). Just as with cities and towns, we may determine the economic structures of villages, *mezraas* and other settlements by analysing taxes and dues levied on them. In villages, where 90-95% of the tax income collected from the rural areas accrued from the agriculture and stockbreeding and the related activities, the economy was clearly

dependent on the primary sector. In contrast, there was a completely different situation in towns and cities, where taxes connected to industrial activities and services proliferate in kind and value.

We can both determine the economic structure of each settlement centre and follow the financial relations and hierarchy among the villages and cities of a region. From this viewpoint, it is obvious that more significant evaluations can be made about the entire Ottoman lands. In sum, since the *defters* mention the tax-revenues of the regions, albeit as estimates, the *defters* are quite significant in studies on general developments and changes in the Ottoman economy between the fifteenth and sixteenth centuries and in determining the probable fluctuations as time progressed (Öz, 1991).

c- Tertiary sector data

By tertiary sector, we mean the type of production where there is no end-product or produced goods, unlike the primary and secondary sectors. For example, there is no production activity in a merchant's business, because he only provides a service by transporting goods from one region to another. Administrators like *kadis* and deputy *kadis* or *naihs*, the literati such as *imams*, *müderrises/medrese* professors, *hatips/preachers*, soldiers undertaking policing and guard duties, *derbentçis/pass-guards*, and similar people also come under this category.

Information on the commercial activities of a settlement, on the other hand, can be deduced from the taxation records pertaining to the marketplaces of cities and towns of that period. Generally, such tax-units and taxes (İslamoğlu-İnan, 1991) as *mukataa/tax-farm*, *tamga/stamp-tax*, *bac-ı bazaar/market dues*, and *ihtisabiye* (tax connected to the hisba, regulating marketing rules) levied in cities and towns are clear indications of continuous commercial activities in the settlement centres in question. The existence in a center of *kapans/public weighing offices*, inns and caravanserais is a further sign of some degree of commercial activity therein. It is not too difficult to find out the location, type and volume of the commercial activities, because the provincial *kanunnames* specified in a detailed manner the amounts of taxes and dues on all the products and goods sold and bought in the markets of the province in question, while from the *mufassal tahrir defters* we learn the estimated amounts of taxes to be collected from the products and services in cities and towns of the same region. The customs records pertaining to towns and cities with harbours

or ports display the volume and various features of maritime, long distance and international commerce and trade (Karaca, 2002).

Under the tertiary sector classification we find a wide range of functionaries such as *kethüdas*/wardens, *imams*, *hatıps*, *müezzins*, *muhasıls*, *müderris*, *muallims*/teachers, *muhtesibs* (in charge of supervising marketing, manufacturing and trading activities), *the ases*/guards or police, and *müstahfız*/fortress guards. We also encounter the following occupations in the registers: stable men, fishermen, woodcutters, falconers, gatekeepers, bakers, the *canbaz* (lit. those who stake their lives; a group of the military performing dangerous duties), rice growers, falcon keepers, the *hallaç* (cleaner or dresser of cotton-wool), sieve makers or sellers, tar-makers, *sof* (Angora camlet) producers, alum miners, stone makers, salt producers, bow-makers, pitch makers or sellers, jar makers, dealers in candlesticks, sweepers or cleaners, bread-makers, scribes, caretakers (of mosques etc.), repairmen, *müftis* (official counsels who give canonical opinions to applicants), the *nakibs* (registrars in charge of the affairs of descendants of the Prophet Muhammad), pass-guards, fortress commanders, felt-makers, cauldron-makers, *şerbetçis* or makers and sellers of sweet beverages, sellers of muslins, sieve makers or sellers and sifters, butchers, the *mutened*/stewards or reliable men in charge of things, carpenters, and, finally, saddlers. Because of this data, we are able to assess the economic structure of a settlement, while it also enables us to see the active and lively aspects of economic life in the Ottoman Empire.

Such auxiliary groups as the *martolos* and *pandor* responsible in the non-Muslim communities for maintaining security, the *derbentçi* employed in passages (Orhonlu, 1990), *beldars*/guards supervising dips in the ridges and *köprücüs*/bridge-keepers are all among the essential groups of the tertiary sector. By using the marginal notes and statements in the *mufassal defters* pertaining to people employed in the *derbents*, we can determine both the networks of transportation of the period and the number of people employed in these kinds of activities (Yinanç-Elibüyük, 1983).

Besides the tertiary groups mentioned so far, we should also take into consideration a wide range of *wakf* establishments like mosques, *mescids*, inns, public baths, *medreses*, bridges, shops, *tekke* and *zaviyes* (convents and hospices), all of which functioned without any profit. In fact, most of these foundations provided public services that can be considered equivalents of today's municipal services. In addition to information provided by the *mufassal defters*, we can also obtain detailed information on these kinds of

institutions and the number and qualities of their employees in the *defters* (O.116/1).

Wakf defters record the locations and amounts of income sources as well as the expenditures of all institutions belonging to the foundations. Thus, we may find interesting results by analyzing the locations and revenues of these foundations. The lists of tools, goods and foodstuffs necessary for the works done and services provided by the employees of the foundations were recorded together with their prices (Barkan-Ayverdi, 1970) in the *defters*, which give us some more small details essential to understanding the socio-economic life of the era. Records of the books belonging to the libraries of various foundations and complexes such as the Istanbul *wakfs* (Barkan-Ayverdi, 1970) of Şeyh Sadreddin Konevi in Konya (in 1483) (O. 116/1) give us some idea of the scientific and cultural life of the era.

IV- Limitations and Deficiencies of *Tahrir Defters*

In the light of what I have said so far, it is clear that the *tahrir defters* offer a very detailed and significant collection of data. Despite this clear value, it is impossible to say that they are flawless or impeccable. This is because they have insufficiencies and deficiencies in some respects (Coşgel, 2004). We should also bear in mind that these documents were prepared to meet certain requirements of their time; they were not designed to provide answers to the questions of future historians. Therefore, it is pointless to ask questions of these sources that they can not answer. There is no need to resort to these kinds of questionable analytical methods, because it would distort the true meaning of the source and hence making the answers invalid (Hamshere, 1987). Although the deficiencies resulting from these reasons will not decline their importance, it is nevertheless useful to have them in mind.

Needless to say, when studying these sources we must take into account their periods, compilers, methods used to draw them, and all of their particularities from different angles. Moreover, we should not restrict our research to the *defters* only but should triangulate it with other available and relevant documents (as discussed below). A study might be incomplete if based on a single source. Therefore, for a satisfactory result, all the other related documents in hand should also be examined and evaluated thoroughly.

In these registers, like the documents pertaining to European middle ages, we find some kind of shorthand or code; thus, decoding is necessary

to understand them. A satisfactory understanding of the language and codes of the sources is of great importance if we are to use them in a sound way. For this reason we must grasp the language of the sources as well as the methods, objectives and motivation of their compilers (Hamshere, 1987). The Ottoman *tahrir defters* were written in the '*siyakat hat*' (a coded script used in financial records, the finance cypher) (Fekete, 1955) and the *siyakat/divan* numbers (stylized forms of the Arabic numbers) (Elker, 1989), the most difficult and stenography-like scripts in the Ottoman calligraphy, were often employed in them as well.

The following can be said on the limitations and deficiencies of the *tahrir defters*. First and foremost, just like rules and regulations in provincial *kanunnames* the *tahrir defters* exhibit variations according to region and time period. It would be naive to expect unanimous and standardized practices prevalent all over the territories of the multi-cultural and multi-ethnic empire. Thus, one should approach the points explained below with these reservations in mind.

Recorded in the *defters* are, with some exceptions, the adult males subject to taxation, not the whole population. The usage of some terms may cause difficulties for researchers (İslamoğlu-İnan, 1991), because their meanings may have changed from region to region or in time (Sevim, 2000). For example, in the Ottoman society of the fifteenth and sixteenth centuries we see some uncertainties in the meaning of *hane-mücerred* category, particularly at what age a child was considered as bachelor or unmarried adult. Similarly, such terms as *çift*, *caba*, *caba-bennak*, *kara* and *mücerred* showed some variations according to time and region (Çiçek, 1995), while in some areas they were not registered at all due to their exemption from taxes.

Regarding data on economic activities, it is well-known that the *defters* reflect the average and conjectural amounts of the taxes (based on the estimated production figures of the three years prior to the survey) recorded, not the actually collected figures. Further, the sources do not contain all the taxes collected from the *reaya*, nor was the entire economic potential taxed. (For instance, the animals owned by people and dairy products would not have been taxed except for sheep, pig and butter. Similarly, garden products and viticulture were subject to taxation only when they were marketed.) There is also the possibility that the *dirlik* (revenue-holding) owners and the *reaya* might have concealed the actual amount of their production from the *tahrir* commission. Occasionally taxes

on a number of financial activities in cities or those on some agricultural crops were recorded together. Similarly in some cases the income of a settlement would be given in a lump sum. The monetary values for the tax-returns shown in the *defters* are the official prices and do not reflect the actual market prices (Çiçek, 1995).

Another problem for historical geographers is that these sources lack any kind of standardization of measurement units used (Hamshere, 1987). The measurement units used in *tahrir defters* differed according to region and were not standardized throughout the empire. Nor was there an agreement with regard to their values (Öz, 1991), for example, there is no clue as to the kg. equivalent of one *kile*. The measurement and weight units cited in the *defters* for agricultural products vary not only from one sub-province to another but, at least in some areas, vary even between the *nahiyes* of the same sub-province. This, of course, creates difficulties when one attempts to gauge and compare the potential production of a region with others or with the same region in the present-day (Koç, 2000).

Although there are significant limitations and deficiencies of *tahrir defters* for modern researchers, there are also ways by which one may compensate for them, via supplementing them and checking their data against other available sources. As Çiçek concluded, the data of *tahrir defters* need to be complemented by sources belonging to pre-Ottoman times, which would strengthen their reliability (1995: 104-111). In addition, it is well-known that for a more accurate interpretation of these sources we need to have at our disposal the *kanunnames* and, for acquiring satisfactory results, the kadis court registers or *şeriyye sicils* of the area studied (Barkan, 1943). Therefore, we should not only be content with the *mufassal*, *icmal*, and *wakf tahrir defters*. Rather, we should consider them in connection with other contemporary sources such as the *mühimmes* (registers of outgoing imperial orders), *şeriyye sicills*, *cizye* (registers for poll-tax on non-Muslims) and *ruznameçe* (daily records) *defters* or even the *seyahatnames* (books of travel) and such other sources written later (Lowry, 1991).

In fact, some researchers argue that by using pre-Ottoman sources we can benefit from *tahrir defters* from many other aspects. For instance, it has been emphasized that in order to analyse the transition process from the Byzantium to the Ottoman period and the influence of the former over the latter we should treat the Monastic sources together with early Ottoman *tahrir defters* (Bryer-Lowry, 1986). Thus we will be able to determine the influence of the Byzantium on the Ottomans (Köprülü, 1999), as well as

explore continuities and changes between the two periods. Thus, the use of these sources jointly with the *tahrir defters* will help to remedy at least some of the deficiencies of the *tahrirs* while enriching and diversifying the *tahrirs* data.

V- Conclusion

From all that have said above it can be inferred without doubt that these defters are essential sources for the historical geography of all Ottoman territories established between the 15th and 16th centuries where the timar system was in force. By cross-checking the data in the *defters* with other sources that correspond to the same period, we further increase the benefit from these defters. Therefore the studies of *tahrir defters*, as in the studies of the Domesday Book in England (Butlin, 1993), can constitute an initiation point for historical geography, and correspondingly can create its own methodology in the years to follow.

To sum up, the *tahrir defters* are the most important and unique sources revealing especially the economic geography and human geography of the Ottoman lands during the fifteenth and sixteenth centuries. These are old documents containing recordings of the adult male inhabitants; the social characteristics of the population; and the variety of rural and urban economic activities and their relative significance in *mezraas*, villages, towns and cities. Thus, they are extremely valuable sources for the study of historical geography of the Ottoman territories. Finally, it should be emphasized that the data found in the *defters* are quite convenient for statistical analysis.

The *tahrir defters'* detailed information on the location and characteristics of extensive areas makes it possible to apply the elements of spatial distribution in studies of historical geography. Most, if not all, of the data in the *tahrir defters* are either 'quantitative' or 'convertible into quantitative'. This makes it possible for the researcher to prepare varied and detailed maps concerning many research topics. As is known, the application of spatial distribution elements allows the researcher to compare the distribution of occurred geographical events in regard to time and space. Since the defter records let the researcher investigate a region depending on its altitude, it is possible to make vertical distribution besides horizontal. Thus, with the application of elements and methods of modern geography, it is easier to attain accurate and detailed results and hence to enhance the quality of the research. Furthermore, with the assistance of the

data obtained from the *defters*, one can resolve some current problems originating from the past.

Thanks to *tahrirs*, which are the indispensable elements of the timar system, we can make informed guesses on the total population, by establishing settlement compositions of a centre, a region and finally the country as a whole. By determining the economic structures of each settlement centres, we can differentiate rural from urban areas in various aspects. If there are a series of registers of the same area, it is also likely to discern short, medium and long-term changes and development of the various features of rural and urban areas. The limitations and deficiencies of the *defters* in no way pose serious disadvantages for historical geography studies. Although there have been detailed and extensive studies up to now based mainly on *tahrir defters*, there is still a long way to go. Many *defters* contain rich information that awaits exploration by researchers specialised in different disciplines. Much of the information would be beneficial if analysed by alternative methods and techniques. Last but not least, historical geographers should demonstrate interest to these *defters* and do more research on them.

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