



**RECONSTRUCTION OF LAND OWNERSHIP IN THE PROVINCE OF UTRECHT IN 1400.
DATA, SYSTEMS AND PROCESS.**

E.S.S.H.C., VIENNA, 23 - 26 APRIL 2014

A.P. VAN OOSTSTROOM

TABLE OF CONTENTS

Introduction	3
1. Research area	7
1.1. A small history of Utrecht	7
1.2. Cope development	8
1.3. The Parish of Maarssen	11
1.4. The judicial district of Maarssenbroek	11
2. Sources and data	15
2.1 Pre-cadastral maps (ca 1550 – 1800)	15
2.2. Land taxes (1429 – ca 1800)	16
2.3 Parishes (1583)	18
2.4 Judicial districts (1400-1800)	18
2.5 Tijns (1400- 1800)	19
2.6 Tithes (1400 – 1800)	19
2.7 Landownership (1400 – 1810)	19
2.8 Waterboards (1523 – 1840)	21
2.9 Notaries (1560 – 1810)	22
2.10 Peat and clay	23
2.12 Liquidation of the state owned properties (1789 - 1832)	24
2.13 Conclusions.	25
3. The System	27
3.1 GIS.	27
3.2 HISGIS	29
4. The Reconstruction process	33
4.1. Earlier research, pre GIS	33
4.2 Earlier research, post GIS	34
4.3 This reconstruction	34
5. Summary and conclusions	37
6. Attachments	40

Introduction

From the establishment of the Church of Utrecht in 695¹ until 1528², the bishops of Utrecht played a dual role, that of the spiritual leader of an area equal to the part of the current Netherlands, located north of the Rhine and that of landlord of an area roughly equal to the current province of Utrecht³. Associated with those roles, they had very substantial land holdings. Initially only land along the large rivers was in use, the rest was wilderness. By giving out this wilderness for development, starting in the 11th century, they also played a large role in shaping the province of Utrecht. Collegiate churches in the city of Utrecht and some large convents on a smaller scale, did the same and these developments together defined both the judicial and parcel structure of the current province of Utrecht. Part of the judicial power remained with the bishop, the rest was given out to nobility, minsters, large convents and some larger cities.

The Landbrief of 1375 allowed the bishop of Utrecht to raise taxes on land⁴. Collecting these taxes required a registration system. It must have been a Herculean task to collect the data of about 10.000 properties and combine these data in one set of books. The standard tax charge was 1 Oudeschild per morgen of land, hence the name ``Morgengeld``, less productive land received a discount on this tax⁵. The first tax collection took place in 1429⁶. The earliest kept registration, the Morgengeld registers, dates from the middle of the 15th century and it provides the first complete registration of landowners for the province divided in judicial districts, listing the owners, the amount of land they owned and the amount of tax to be paid⁷. Putting this information on a map per parcel will improve the visibility and understanding of this ownership. It might also provide insight how this ownership has been established and developed. Since these registers do not provide any information on the location of the individual parcels within their judicial districts, placing these parcels on the map requires using data from other sources.

A parcel map for the complete research area is also required. The first source allowing the construction of a such a map for the province of Utrecht is the cadastre of 1832⁸. This reconstruction aims to connect each of the parcels shown in the 1832 cadastre to the mentioned Morgengeld registration. For this purpose a digital parcel map for the province has been constructed based on the information from the said cadastre, using a Geographical Information System or GIS. The combination of a GIS and a digital map provides a system to add data for each parcel on the map, as required for the reconstruction.

Data related to the ownership and usage of land, prior to 1832, is very diverse. Most of it is available in handwritten form in a large number of different archives. Making these handwritten data useful for the reconstruction process requires these data to be made searchable. Some of this work already has been done by others. For example printed and digital repertories of feudal estates are available as are

¹ S. Muller Hzn, *Geschiedkundige atlas van Nederland*, I Bisdom Utrecht, 1921, p 48.

² In 1528 Charles V, king of Spain replaced the bishop as secular leader and acquired all of his land holdings and other rights.

³ Also in the North-eastern part of the Netherlands, the bishop had substantial holdings.

⁴ F.H.M. Grapperhaus, *Jaarboek oud Utrecht*, 1996, p88

⁵ A morgen is 0,8516 hectare; geld = money.

⁶ See 3

⁷ For the eastern half of the province, the first available registers date from 1444, for the western half from 1459.

⁸ This cadastre has been set up for the purpose of establishing a uniform land tax within the Kingdom of the Netherlands.

the transport registers of some of the judicial districts, which keep track of ownership and the transfer thereof⁹. Most other property information however, first needs to be transcribed from the original sources. Preferably these transcriptions provide information per parcel on the owner or owners, the size of the property, its location and information on its neighbours as well as the time of the registration. Many sources do not provide all of these data and therefore information from more than one source has to be combined. This complete information per parcel also needs to be established at more than one point between 1400 and 1832, to allow connection to other parcels like in a domino game. Once the location of a parcel has been established on the map, at a certain time, earlier and later information can be added to that parcel. Doing this for all of the about 30.000 parcels within the province of Utrecht in 1832 is not very practical. Part of this reconstruction work is therefore to establish a process for collecting, transcribing, storing and using this information efficiently and effectively. An analysis and understanding of how the various registration systems were set up and have been used is important, as will be shown.

Almost 300 judicial districts existed within the province of Utrecht in 1400. Each of these districts developed and maintained its own system for tax collection and the registration of land ownership¹⁰. The latter was initially based on individual deeds issued by the districts as a proof of ownership, later these deeds were also registered in the transport registers¹¹.

About 200 religious and non-religious institutions as well as private persons, often nobility, owned and rented out their land to tenants and some of these tenants also worked their own land. These institutions had their own administrative systems of keeping track of their properties and its use. What has been preserved of these systems provides in many cases enough information for the construction of a complete property register for these institutions.

Transactions of the properties were took place in different type of courts. Feudal property was transferred to the new owner before a feudal court and “tijns” courts dealt with properties to which a tijns had to be paid¹². Transactions of other type of properties took place within the various judicial districts. Much of the information documenting ownership and transactions within these districts and as well as the information of institutions, minsters, convents, hospitals and of nobility has been preserved; a lot however has been lost. Large differences in completeness, quantity and quality of the availability of sources exists between these districts and institutions. Some of the very small judicial districts were combined with larger, neighbouring districts. When the cadastre of 1832 was put in place, only about 100 of these districts were left and they became the cadastral municipalities.

Based on the above, the plan of attack for the reconstruction of the land ownership can differ greatly per district, depending on how the district was initially developed, the availability and accessibility of sources, its size and location. The reconstruction process therefore must remain flexible to cater for these differences.

In 1528, the bishop of Utrecht transferred his secular rights and property to Charles V who introduced in 1539 a new system of land taxation, called the Oudschilgeld¹³. The system used for this registration

⁹ Many of these feudal registers are available and can be searched on the internet at Hogenda.nl

¹⁰ The exact number of judicial districts in 1400 has not yet been established and the process to reconstruct these districts runs parallel to the reconstruction of ownership.

¹¹ For 136 judicial districts, these registers are still available. Because many districts have been combined with others and these transport registers cover essentially the whole province.

¹² This hof-tijns was a small charge to landowners, dating from the time that land was used in a court structure (hof) as will be discussed in chapter 2.

¹³ This tax charged was one Oudschild per morgen.

differed from the earlier system for the Morgengeld registration. Also the Morgengeld registers, in later years, only contained the names of the users of the land (since they generally paid these taxes¹⁴). This leaves a owner-registration gap of more than 60 years between these tax registers. The system for the collection of the Oudschildgeld was used until the end of the 18th century and provides essentially an cadastre for a period of more than 250 years.

The Reformation in the second half of the 16th century caused a major change in land ownership. In 1581 all Roman catholic institutions in Utrecht were dissolved and its properties were taken over by the Estates of Utrecht and some of the city government magistrates¹⁵. Most of the land owned ownership of these institutions remained intact and the registration and administration thereof continued under various forms of stewardship. These new owners must have required a complete registration for these estates, as many of these registrations are still available. In a number of cases these registers contain a full description each of the parcels within the estate; for a number of religious institutions this registration is the only complete listing of their property. With these estates now under government control, land started to be sold to private persons, starting in the middle of the 17th century. At the end of the 18th and beginning of the 19th century, the remaining, still very substantial, landholdings were sold, driven by budgetary necessity as a result of various wars and the occupation by France. The French occupation also terminated the feudal system and its associated registrations¹⁶. In the 1832 cadastre all landownership was registered uniformly for all provinces within the Kingdom of the Netherlands. The resulting, now uniform, land taxes were paid mostly by private persons and less than 1 % of the land in Utrecht was then owned by institutions, mostly local parishes.

Reconstruction of land ownership without the use of a GIS had been done earlier. Krenzlin & Reusch, Balzer and Hartmann¹⁷ also used the earliest cadastral maps as the base map. These reconstructions would have greatly benefitted from using a Geographic Information System (GIS) or more specific a HISGIS, defined as “a toolkit enabling historians to structure, integrate, manipulate, analyze and display data in a data rich environment”¹⁸. Computers were available but the GIS software only became available in the mid 1990's. A HISGIS allows to store and link data from multiple sources, filter, sort and analyze these data and display maps and reports on the basis of these data. The first HISGIS for the Netherlands was constructed by the Fryske Akademy on the basis of a registration of land taxes that overlapped with the 1832 cadastre¹⁹.

This paper will describe the sources, systems and processes that are being used for the reconstruction of landownership in the province of Utrecht, as this province was defined in the 1832 cadastre. The objective is to link each of the parcels in the 1832 cadastre to the registration as provided in the Morgengeld registers, the Oudschildgeld registers and the property registers of the various religious and non-religious institutions. The research is ongoing and the reconstruction for a judicial district is deemed to be complete when a minimum of 95 % of the land within the district has been linked to these three sources.

¹⁴ These taxation applied to owners and was collected within the judiciary districts, since many owners did not live within that district, it must have been agreed with the tenant who would pay this tax.

¹⁵ The Estates of Utrecht consisted of representatives of the Chapters, Nobility and the cities.

¹⁶ Only the collection of tithes remained as a remnant of the old system. This was replaced by a landtax in 1911.

¹⁷ Anneliese Krenzlin and Ludwig Reusch, *Die Entstehung der Gewinnflur*, 1961, Manfred Balzer, *Untersuchungen zur Geschichte des Grundbesitzes in der Paderborner Feldmark*, 1977 and J.L.H. Hartmann, *De reconstructie van een Middeleeuws Landschap*, 1986.

¹⁸ Ian N. Gregory and Paul S. Eli, *Historical GIS, Technologies, Methodologies and Scholarship*, 2007

¹⁹ A part of these data can be viewed at WWW.HISGIS.nl. This site also hosts results of the reconstruction discussed in this paper.

Most land was co-owned and the owners and users of the land had to share the yield of their properties with others as established in the form of certain rights on this land. The most important of these rights were the judicial power over the land and its owners and users and the right to levy tithes and tijn²⁰. Each of these rights represented its own profit centre, Each of these could be sold, inherited and rented out. Farmers often had to share their revenues with a number of different co-owners.

Establishing how land ownership and the ownership of these 3 rights are distributed in 1400, should provide a better insight in how these rights had been established, in many case many centuries before these became visible though the mentioned sources.

²⁰ See 12.

1. Research area

1.1. A small history of Utrecht.

The province of Utrecht is located in the Rhine-Meuse delta. Archaeological sources indicate human occupation from about 40.000 BC²¹. In Roman times the Rhine formed the northerly border of the Roman empire and several fortifications existed here during that period. After the Romans had left the economic activity declined and population shrunk. It is assumed however, that inhabitation in this region has been continuous and was mostly situated on floodplains. These had been formed by the annual flooding of these rivers. The coarser material was deposited close to the river, the finer material in the floodbasins. The eastern part of the province consisted of higher elevation sand deposits, the western and north-eastern parts were a mix of peatlands and floodbasins²². Around 1100 AD land ownership existed mostly in the form of rights of the church of Utrecht, minsters and convents on wilderness.

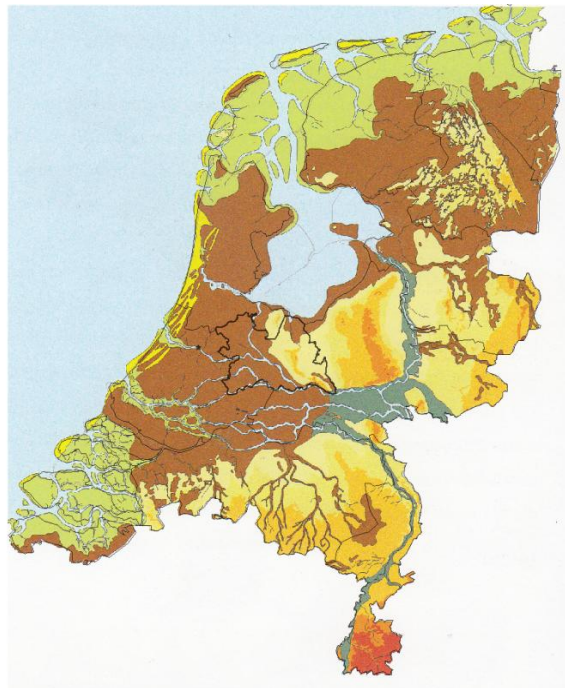


Figure 1: The Netherlands ca 800 AD (green: tidal areas, brown: peat lands and flood basins, yellow and brown: Pleistocene landscape, Utrecht in the centre.²³

This land ownership had been established through royal gifts either as allodium or as feudal land. The geographical boundaries of these rights were vaguely described in the deeds of these gifts. Most likely these boundaries only became important when they were challenged by others.

²¹ C. Dekker, Ph. Maarschalkerweerd and J.M. van Winter, *De geschiedenis van de provincie Utrecht*, 1997, p 21.

²² C. van Steenberghe, Wouter Reh, Steffen Nijhuis and Michiel van Pouderoijen, *De Polderatlas van Nederland*, 2009, p 36.

²³ As 20.

Initially additional farmland was most likely developed from existing settlements on an incremental basis.

The first geographical division of the province of Utrecht has been established through the creation of parishes. It is outside the scope of this article to discuss the process of how these parishes were established; it is important to note however that in a lot of early registrations, land was located within parishes and not within judicial districts.²⁴ These parishes had been established gradually based on where people lived, possibly with similar vague descriptions. As the outer boundaries of parishes and judicial districts coincide in many cases, possibly these borders may have been finalized with the formation of the judicial districts during the time of the large developments. Some of the parishes were created possibly as part of this land development process. In the beginning of the 15th century about 300 judicial districts were located within about 75 parishes²⁵.

Generally it is believed that from the 11th century onwards, systematic, large scale developments were used to convert peat wilderness into farm land. As mentioned before, development of land had, until then, mostly been done from existing farming infrastructures; these new developments converted large areas lacking any infrastructure into communities, consisting of a number of farms, sharing roads and water drainage systems. For this purpose sections of undeveloped land were issued to “locatores²⁶”. This could be done on the basis of transfer of the land alone or inclusive of a number of the rights associated with the land. As the landlord, the bishop owned the land in the wilderness, including the judiciary power, the right to raise tithe and special levy recognizing the original land owner, called “tijns”. The descriptions used in the feudal registers of the bishop show a number of different combinations of the land and/or these rights, this could suggest that the “package” that the locators received was not fixed and possibly determined through a negotiation or another process of “give and take”²⁷.

1.2. Cope-development

A number of cities and villages in the western part of Utrecht and in the eastern part of bordering Holland have names ending on “cop”, “koop” or “schop”, all referencing a system of land reclamation called the Cope²⁸. This way of land reclamation was systematic; the land was divided in “hoeven”, parcels of land, 1250 – 1300 meters long and about 110 – 115 meters wide, totalling 15 - 20 morgen²⁹. One theory suggests that this amount of land would provide sufficient income for a family.³⁰ Using this systematic reclamation process, the wilderness as mentioned above has been converted to a number of hoeven of equal size, from which income to the various co-owners could be generated³¹. The first step in the reclamation process was to lower the water level in the section of land and in many cases that meant digging a central ditch, to which the ditches between the hoeven could be connected. Obviously these large infrastructural projects required a lot of manual labour as well as

²⁴ Judicial districts often had the same name as a parish, they could however be vastly different in size.

²⁵ The total number of judicial districts has not yet been established, the number of parishes is estimated based on S.Muller Hzn, *Geschiedkundige atlas van Nederland, De Kerkelijk indeling omstreeks 1500*, deel I, Bisdom Utrecht, 1921.

²⁶ In present terms: a project developer. He acquired the land, had it developed and distributed it to the new owners, H. van der Linden, *De Cope*, 1955

²⁷ A.J. Maris, *Repertorium Stichtse leenprotocollen*, 1956. **Geef voorbeelden voor GTT, GT, T of schema.**

²⁸ For a complete list see *De Cope*, p76 – 77.

²⁹ This 1250 -1300 meters correspond to 6 voorling or furlong, (a furlong equals about 200 meter and is still used in the UK today), the 110-115 meters corresponds to 30 rods of 3,756 meters each.

³⁰ As 19, p136.

³¹ For lack of a better word, the process to reclaim and convert wilderness into a judicial district consisting of a number of hoeven will in the further text called Cope-development.

centralized planning and direction, the latter was provided by the "locatores", the former by the future owners and users of the land. Judicial districts were measured in a number of hoeven and each one had their own legal and administrative system and tax collection, maintained the roads and ditches within the district and later, once necessary, built and maintained their own windmills. Large pieces of land were often subdivided in a number of districts.

Figure 2 shows the south-western part of the province of Utrecht; a section which is bordered by a number of natural waterways, in the South, the Lek, as this section of the river Rhine is called here, in the East and North the Holland IJssel and on the Westside the province of Holland is located. In the south-easterly section there is another natural waterway, called the Small or Crooked IJssel. North of this waterway there are three sections of parcels running from left to right, being about 13 km long, each one showing the form of the Crooked IJssel. These 3 sections are surrounded by Cope-developments with a different furrow direction. The red lines are the borders of the judicial districts. The map clearly shows the diversity in size and form of these judicial districts, which resulted from the above mentioned process of land development. This diversity has a number of causes; its location, the amount of land issued to the locator and whether it is an early or later development.

The furrows of the land in districts along the rivers are perpendicular to the river, suggesting that the land-surveyors started their work at this river. Also can be seen that the rear border of the judicial districts runs parallel to the river. A number of these developments do not meet all of the Cope criteria as a result of the earlier mentioned causes. The elongated, triangular, district Blockland clearly is a later development; it had to work with what was left, as the name Blockland also implies.

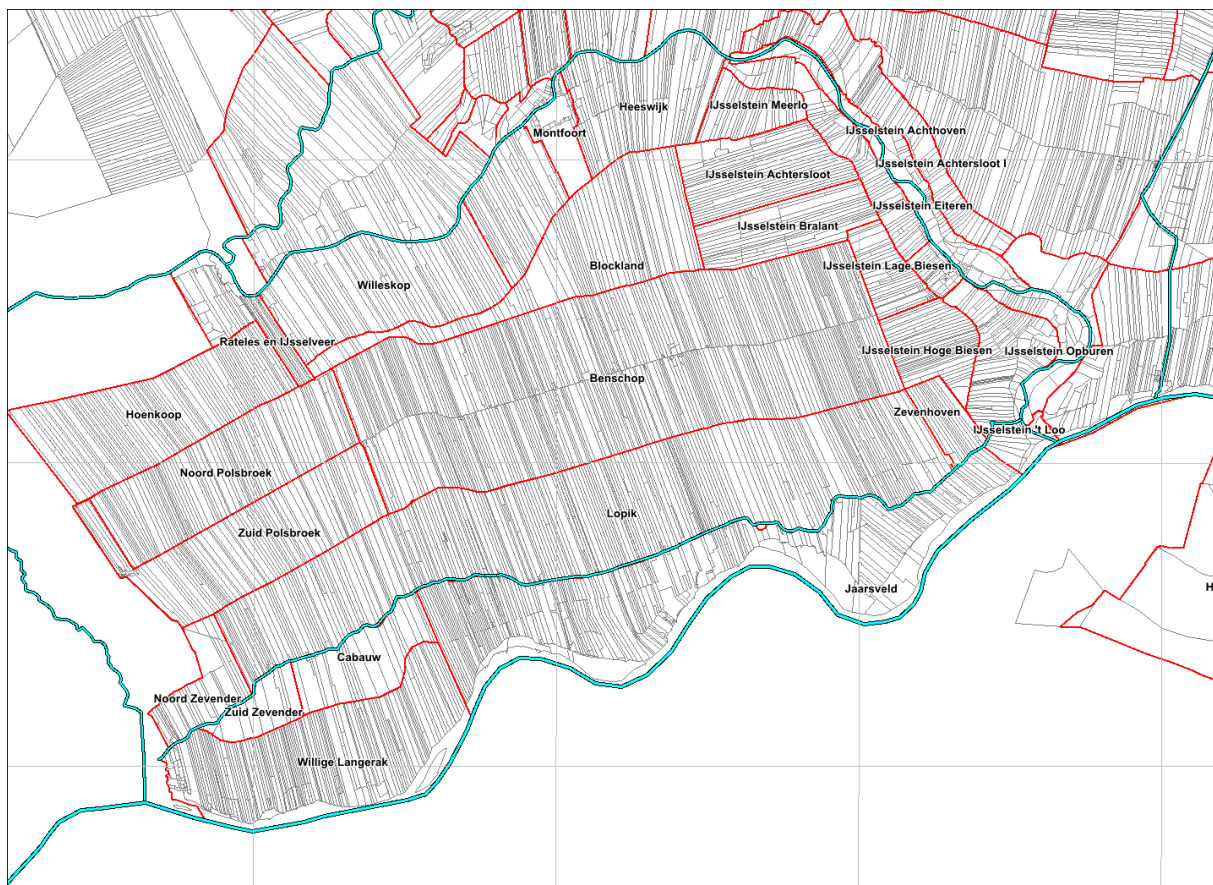


Figure 2: Various Cope-developments in Southwestern Utrecht.

The size of a development was expressed in a number of “hoeven” and today a number of cities and villages still carry “hoven” or “hoeven” in its name. Examples are Vierhoeven, Zevenhoven, Achthoven, Tienhoven and Schoonhoven. The word “hoeve” means farm, it also stands for the amount of land belonging to this farm. The amount of land per hoeve can differ, mostly as a result of the length of the parcels and in Tienhoven the ten hoeven, total 789 morgen as the parcel length was well over 7000 m³². The size of a property as documented in registers and charters is typically expressed as a quarter, a half or a ”hoeve”, independent of whether the land holds a farmhouse or not. Because of its regular parcel shape, the parcel sequence in a Cope development was followed for the administrative system for tax collection, as was found for a number of these developments, as can be seen in fig. 4.

³² All these hoeven have a width of 110 - 115 meter.

1.3. The Parish of Maarssen

A good example showing the characteristics of the Cope-development process is the parish of Maarssen, which was owned in the 13th century by the Minster of the Dom in Utrecht and later, until 1553 by the Teutonic Order³³. As the map in figure 3 shows, this parish is located on both sides of the river de Vecht. Initially within this parish 3 judicial districts had been established: Maarssen, Maarsseveen and Maarssenbroek³⁴. The judicial district of Maarssen has a fairly regular shape and is the oldest development located on the higher elevation land along the river. Within this district the bishop owned the judiciary power, the tithes and a part of the land was feudal land of the bishop. The section Oostweerd was owned by a large convent including its judiciary power³⁵. It is not clear if Oostweerd had been part of the district of Maarssen or that it was a separate district originally connected to land owned by the same convent in the adjacent development of Zwesereng (Southeast).

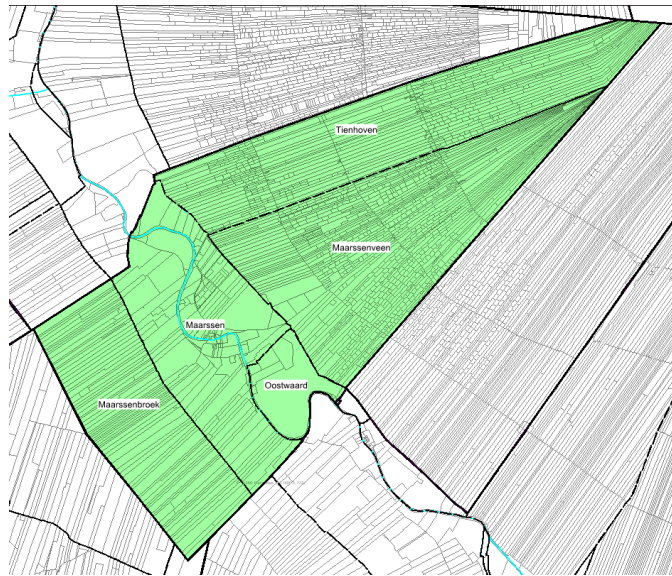


Figure 3: The parish of Maarssen.

The district of Maarssenbroek (broek = swamp), clearly shows all the ingredients of a Cope development with 33 hoeven. The judiciary power and the tithes had been given out by the bishop as feudal property. These 33 hoeven will be discussed in more detail below.

Maarseveen (veen = peat) and Tienhoven, on the eastside initially formed one district³⁶. In the Morgengeld registers the land under Maarsseveen is registered as 24 hoeven and Tienhoven, contains as the name implies 10 hoeven, totalling 34 hoeven, certainly having a different shape and size than those in Maarssenbroek

1.4. The judicial district of Maarssenbroek

Figure 4 shows how this district divided in its 33 hoeven, each colour representing a hoeve. The numbers shown are sequential numbers for these hoeven. This was the result of a reconstruction using

³³ S. Muller Hzn, p 377.

³⁴ Development van Maarssen dates from the 10th century, possibly from an older settlement, Maarssenbroek and Maarsseveen have been developed in the 12th and 13th century respectively. (RHC Vecht en Venen, 1028, introduction)

³⁵ A.L.P. Buitelaar, De Stichtse ministerialiteit en de ontginningen in de Vechtstreek, 1993 p p 269.

³⁶ Buitelaar, p 269.

the 1832 cadastral maps and the information from the Morgengeld registration. As can be seen two half “hoeven” had to be defined to make it fit; it is not clear why this is. The Cope Maarssenbroek measures 3626 x 1285 m and 33 hoeven, providing each hoeve a width of 110 meters, $\frac{1}{2}$ hoeve with 55 meters and $\frac{1}{4}$ hoeve with 27,5 meters This compares to the earlier mentioned 30 rods or 112,7 meter³⁷. Small deviations from this standard width have also been noticed in other developments.

The sequence in which these hoeven, the $\frac{1}{2}$ and $\frac{1}{4}$ hoeven are situated is also an important “footprint” for this reconstruction. The mentioned dimensions above translate to a total area of 466 hectare or 547,1 morgen. This compares with a total of 540,8 in the Morgengeld and 548,5 in the Oudschildgeld registration.

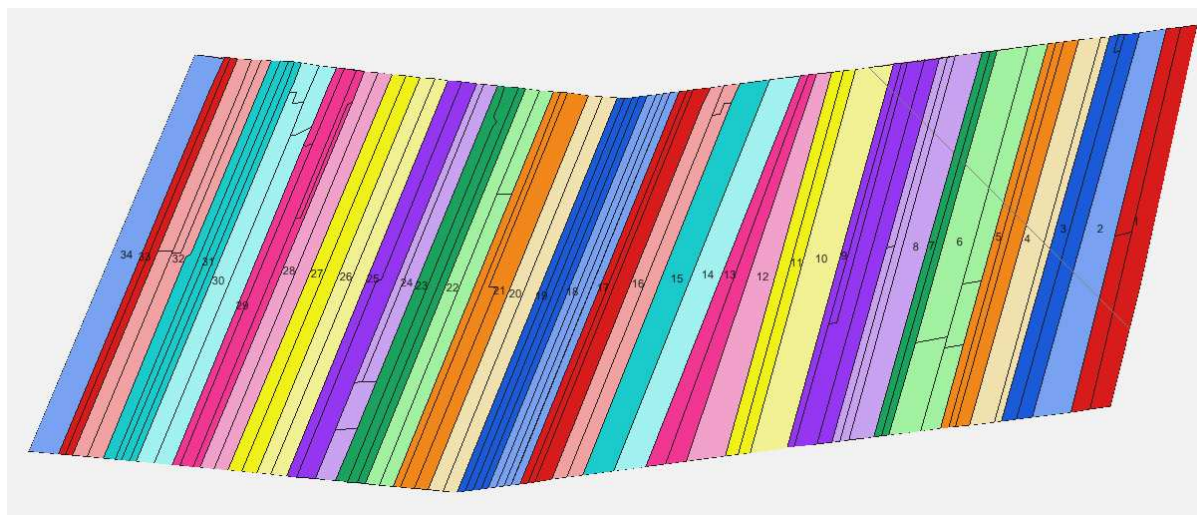


Figure 4: Maarssenbroek divided in 33 "hoeven", 2nd half 11th century (hypothetical).

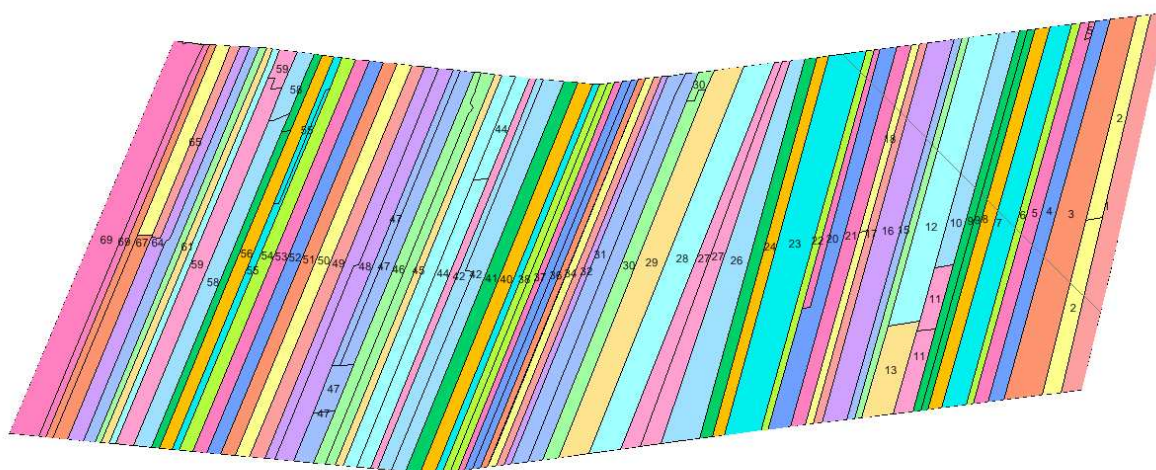


Figure 5: Maarssenbroek, 1459 landtax parcels.

³⁷ The width of a hoeve in a Cope development is believed to have been standardized as 30 Stichtse roeden (rods) of 3.75 meter, totalling 112,5 meter. Small deviations from this standard have been noticed in the various developments.

Figure 5 shows the parcels as listed in the Morgengeld registration³⁸. After the ownership of some of these parcels had been established, using other sources and the above mentioned footprint, the parcels from the registration could be matched with the parcels on the map as the numbers in the map indicate.

The above example shows that the parcel sequence was used to set up the tax administration. This relationship has to be established for each judicial district, as it not clear yet if all districts show this. Once this has been done, it allows for an efficient linking between the 1832 cadastre and the Morgengeld registration. It will be clear that this relationship can only be established by having the right tools to compare the parcel data from the registers with the parcel data in the GIS.

The above example also shows that the number of parcels, within a judicial district, changes over time. According to the Cope theory, Maarssenbroek was a 33 hoeven development, possibly initially existing of 34 parcels, 32 hoeven and 2 half hoeven. In 1459 the number of parcels had already more than doubled to 69. In 1536, 83 parcels were registered³⁹ and in 1832 there were 92. How many colonists started to farm the land and who owned that land, cannot be established. Who used these parcels and which parcels together functioned as one economical unit is outside the scope of this reconstruction. The 1536 registration is shown in attachment 1. It shows the owners and the users, the amount of land and the associated tax.

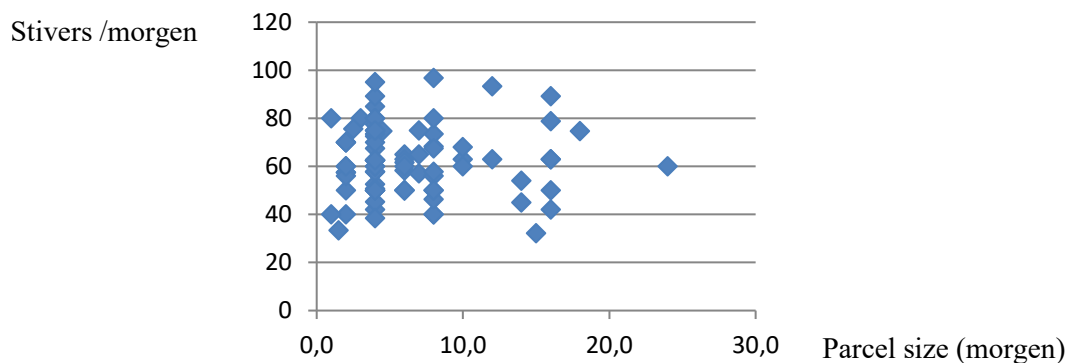


Figure 6: Morgengeld (stivers) per morgen for the 83 parcels in Maarssenbroek

Putting these data in a spreadsheet allows a quick analysis thereof as the above graph shows. The average tax amounted to about 60 Stiver per morgen, but there also was a large spread in these charges, possibly because of the presence of a house on the parcel⁴⁰.

Other conclusions which can be drawn from these data are:

- 61 institutions and persons owned the 555 morgen of land which was used by 46 persons,
- 5 of the users owned part of the land, they used, totalling 39 morgen.
- 255 morgen is registered in the name of religious institutions⁴¹.

In this registration, there is no relation between the location of a parcel in the list and in the field, so only a complete reconstruction will tell us more about where the parcels used by the individual farmers were located.

³⁸ The registration is shown in attachment 1

³⁹ The Oudschildgeldregistration show one parcel which has been rented out to two different users as two parcels and only after a complete reconstruction, the amount of parcels can be established.

⁴⁰ One Oudschild is equal to 42 stivers.

⁴¹ In this number the long lease properties of these institutions has not been included.

The process of Cope development in itself had a large impact on land ownership. In order to have the land developed, the initial owner had to give up the ownership of the land. Giving this land out as feudal property allowed some control, giving it out as an allodium allowed none.

Even when land had been given out by the bishop to a locator, which could be a person or persons or a religious institution, very little landownership in 1400 can be found that links to these locators. These locators recruited colonists to do the work and ownership of one hoeve was their compensation. How the locators were rewarded for their role in the development process is not clear. It could have been in the form of ownership of part of the land or part of the rights associated with the land. The tithe representing 10 % of the yield from the land, crops or new born animals certainly would have been a reward; also the judicial power was a source of income as, on a smaller scale, the right to collect “tijns”.

In the Cope development, giving up the landownership was the price to be paid by the owner for the development. The development work consisted of clearing the land, digging ditches and building roads and farmhouses. This needed to be completed before people could live there and the parcels could be seeded and harvested. Hardly anything is known about the actual development activities and how the colonists went about their work. The results of their work are still very visible today.

2. Sources and data

In the previous chapter we have shown that the process of land development can have an impact on how the administrative systems were set up. Practical as it might have been, to register the properties within a judicial district based on their location, the system did not survive and a new land tax system was introduced under the reign of Charles V, called the Oudschildgeld. It was part of a package of measures to improve the financial situation of the Province of Utrecht. These measures applied to both the collection of the land tax as to the collection of the revenues from the former possessions of the bishop, which had been acquired by Charles V in 1528. The income from the latter is well documented for the period between 1529 until 1564⁴². The former is more difficult to determine over the period between 1536 and 1599. The tax registers from 1536 are still available as well as a listing from 1578 of judicial districts showing the amount of land taxes to be paid by these districts to the provincial authorities⁴³. Although it was a provincial tax, the collection took place within the judicial districts and these districts must have been charged for the total amount and it must have been the responsibility of these districts to collect the tax from the landowners. So far no complete registrations of the collection of these taxes have been found, prior to 1599. In 1581 the Dutch republic, consisting of 7 provinces declared independence of Spain and the States of Utrecht took over the responsibilities from the Spanish kings and earlier the bishop⁴⁴. The system of the land taxes remained in place as well as the collection within the judicial districts; many of these registrations, starting from 1599 are still available and they run until the end of the 18th century, when during the French occupation a lot of the administrative processes seem to change or stop. Within the judicial districts also local taxes were collected and the Oudschildgeld registration must have been used to set up some of these collection systems as some of the sources show. The local taxes applied to owners as well as to users and before using data from these registrations, “who pays what tax” needs to be established. As these Oudschildgeld registers do not provide a link with the parcels, information from other sources is required to achieve that. Which sources is determined by what sources are still available and no type of source can be excluded. Below the most important of these sources will be discussed.

2.1 Pre-cadastral maps (ca 1550 – 1800)

As a source probably the most important; without these maps starting the process of reconstruction, would be very much more difficult. The first pre-cadastral maps start becoming available in the second half of the 16th century. Every map of the research area, deserves a full inspection of all elements that can support the reconstruction process. This applies to topographical information, names of roads canals, ditches, farms, castles, churches, windmills etcetera and cartographic information, the direction of the North arrow, scale or scales as some of the older maps used different scales for length en width, subdivision of the properties by ditches, presence of farmhouses or decoys and other details. Making maps in the 16th century was a very unsophisticated process and the information often is crude, inaccurate and contains mistakes. Different kinds of maps are available, parcel maps, tithe maps, waterboard maps, sketches attached to notarial deeds, some deserve the qualification of works of art, others barely survived their live as mice food. Finding the location of a pre-cadastral map on the base parcel map can be complicated. Generally, however, the location of every map needs to be established on the base map for possible later use. Atlases showing the complete ownership of an institution are

⁴² Utrechts Archief, Financiële Instellingen, 37, nrs 1 -82.

⁴³ Utrechts Archief, Inventaris Staten landsheerlijk tijdperk, 58, nrs 395 – 404.

⁴⁴ De Staten van Utrecht.

very rare, maps very often do not show all the relevant data and the locations where these maps are kept can be many and far away. Some of these maps, however are available on the internet.

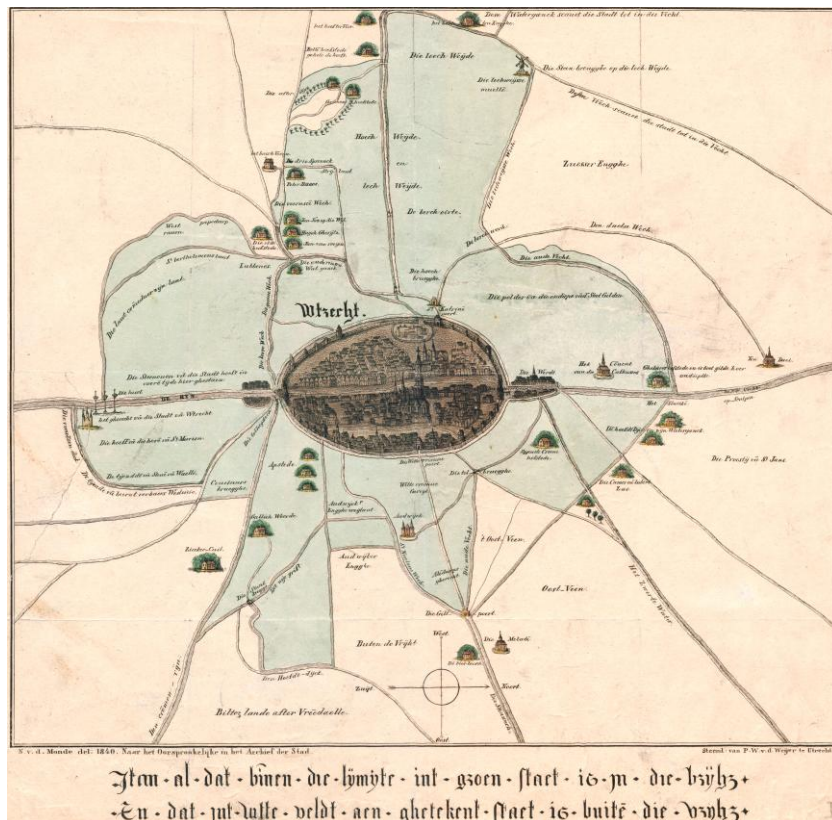


Figure 7: Copy of map of Utrecht from 1541 (1840)

The oldest map of the city of Utrecht, dates from 1541 and still exists. As a map it is not very accurate, it contains very valuable information for this reconstruction, including the names of owners and users of a number of farms⁴⁵. This map was copied in 1840 and is shown in figure 7.

Not all information from these maps can be transferred to the GIS, as a source and these maps should be kept available in the form of digital photos or scans. The registration number of the map should be added to the GIS, a process which will result in geo-referencing all these maps and create a complete digital atlas for these maps.

2.2. Land taxes (1429 – ca 1800)

The already mentioned land taxes: Morgengeld and Oudschildgeld. As the name suggests these taxes were based on a fixed charge: one Oudschild, per surface unit, a morgen. This tax remained constant over the period in which these taxes were raised⁴⁶.

The Morgengeld registers have been set up as a register of owners, they also registered who paid the tax and the amount of tax. Later versions recorded generally only the user and these later registers unfortunately lost their value for this reconstruction. As mentioned earlier some of the registrations allow for an efficient way of connecting owners and parcels. These parcels still need to be connected

⁴⁵ A painting present in the Centraal museum of Utrecht by Evert van Schayck

⁴⁶ Attachment 1 shows these taxes per parcel for the judicial district of Maarssenbroek.

to other sources and often this needs to be done independently as the two tax registers are not connected. In many cases feudal registers provide a link between these registers, as figure 8 demonstrates.

The first complete registration for the Oudschildgeld must have been setup around 1536⁴⁷ and most likely the tax has been collected even after, in 1568, the 80 year war started between the, in 1581, established, Dutch Republic and Spain and data show at least collection until 1593⁴⁸.

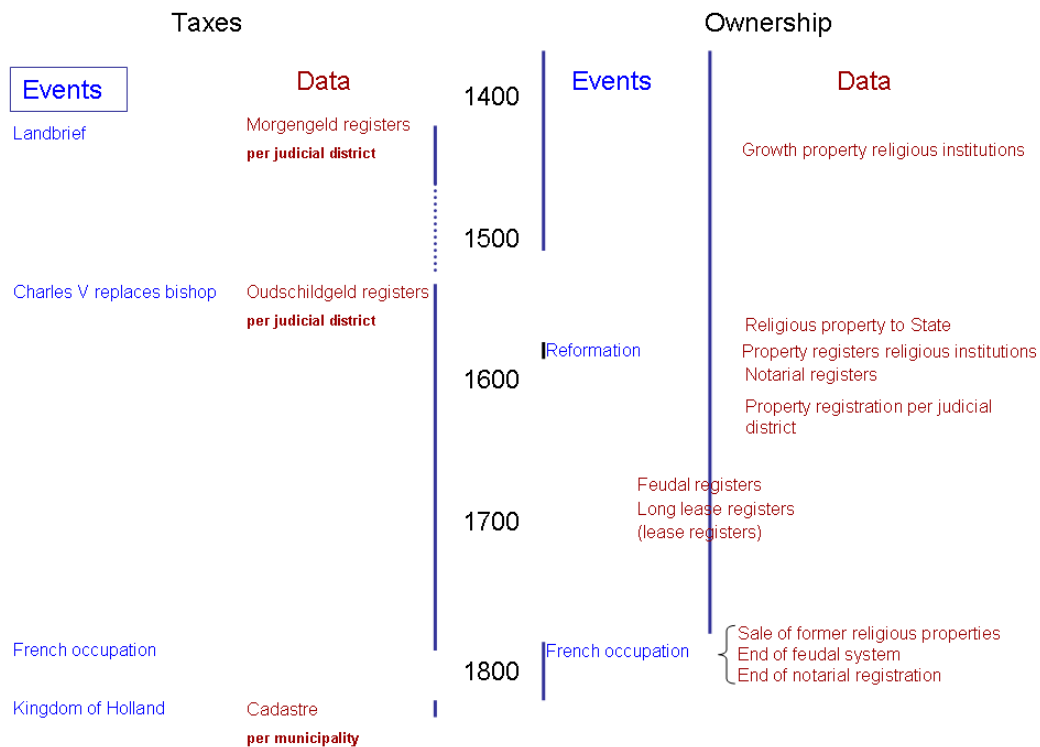


Figure 8: Historic events and source generation

The next complete registration of 1599, uses this 1536 registration, owners and users, adding to this registration, the owners and users in 1599 and the tax amount; containing roughly 15.000 parcels in about 150 Judicial districts⁴⁹. The tax amount for each of these parcel never changed, making this amount an important attribute for a parcel; if a parcel was split, so was the tax. The sequence of parcels used in the registers also never changed, making also the original page number also an attribute for a parcel. Later versions of these registers continued to use the combination of the data from 1536 and in some cases also from 1599 as the backbone and later owners were added to this backbone. This registration was kept in a set of books, dated 1599 and all later documents used within the judicial districts must have been copied from these books, as the introduction in these later documents state. Between 1599 and 1686 no complete registrations are available; starting in 1686, a 10 year re-registration cycle can be identified, although many of these registrations have been lost. The last of these re-registrations dates from 1796/97 and in some districts later registrations have been added to these. To later versions sequential numbers have been added. The new Dutch cadastre of 1832 only

⁴⁷It is possible that for some districts this has been done earlier or later, this year is being used for the reconstruction.

⁴⁸ Utrechts Archief, 233, 144.

⁴⁹ As the reconstruction has not been completed, both numbers are still estimates.

registers the owners, not the users and no link between this cadastre and the Oudschildgeld registration could be established.

To support the reconstruction each of the above registrations is being transcribed into searchable spreadsheets. During the reconstruction process this information is being transferred into the GIS.

As mentioned before, the sequence in which the owners were written into the Oudschildgeld registers differed from the one used in the previous registers. The new sequence must have intended to facilitate the collection process for these taxes better than the previous registers did. In this registration the land parcels were grouped together per user⁵⁰. The land tax was an owners tax and many owners must have agreed with their tenants to pay this tax. Many owners were institutions or they did not live within the judicial district. Although it might have made the tax collection initially more efficient, this advantage disappeared when owners and tenants changed.

Both registrations did not cover the whole province, as some districts did paid their land tax in Holland and some districts did not pay a land tax at all ⁵¹

As a source these two text cadastres together with the 1832 cadastre provide the framework for the reconstruction as figure 8 shows. These sources provide the most complete registration of owners throughout the research period and for the whole province. The other sources, discussed below, generally apply to a smaller segments.

2.3 Parishes (1583)

Parishes did not generate an a lot of administration. One source is available showing per parish a registration of the amount of land these parishes owned in ca 1583⁵². The location of these parishes represents important geographical information as many of the early property and location documents locate land within a parish and this created the need to construct a parish map⁵³. In the 1832 cadastre some land owned by the various Reformed churches is recorded and in a number of cases these correspond with parcels from the 1583 registration. Possibly the ownership after the Reformation has stayed with these parishes or it has been returned later. This has not been established yet.

2.4 Judicial districts (1400-1800)

Judicial districts have various origins, some go back to feudal times, most however were founded as part of the mentioned Cope developments. In 1400 about 300 judicial districts existed, some were very small and did not exercise any of its judicial rights and left this to neighbouring districts. The lords of the judicial districts exercised their rights in many cases together with the landowners within these districts, taking care of the needs of these communities: roads, dewatering and later windmills, collecting taxes and the administration of property transfers, mortgages and wills within these districts. Next to the tax collection as discussed earlier, this administration of property and property transfer provides an important paper trail. Initially this administration was done through the process of issuing individual deeds, recording the transfer of title though purchase or inheritance. Many of these individual deeds have been lost. In the archives of the various institution, however, many are still

⁵⁰ See attachement 1.

⁵¹ The districts within the Barony of IJsselstein did not pay Morgengeld or Oudschildgeld, why that was, has not been researched yet. It also is not yet clear if without these sources the reconstruction process for these districts can be completed..

⁵² Utrechts Archief, Staten, 233 937

⁵³ For this purpose data from S. Muller Hzn, Geschiedkundige Atlas van Nederland, 1921 have been used.

available. Later the so called “transport registers” were established within the judicial districts, recording these deeds in a central registry, providing rich but labour intensive sources.

The language in these deeds was standardized and contained the specifics of this transfer: the names of the previous and new owner or owners and other stakeholders, specifics of the property: size and type of use, and information on adjacent roads, ditches and neighbours. As part of a property transfer, earlier deeds associated with that property were also transferred to the new owner, which when kept, provide a chain of historic ownership, the *retroacta*⁵⁴. Large differences exist per district, how much of these have been preserved. As parcels are being transferred within judicial districts, putting these parcels on the map, also finalizes the borders of these historic districts

2.5 Tijns (1400- 1800)

From feudal times a system existed, requiring landowners to pay a very small amount of money for their property, called *hoftijns*⁵⁵, in recognition of the owner or previous owner of this land. The right to collect a *tijns* was in a number of cases also issued to the locatores in the Cope developments, this *tijns* was called a “recognition *tijns*”. Very limited sources have been left behind by the collection process of this *tijns*. Some registrations are available for the *hoftijns* similar to the registrations of feudal land as both these types of land ownership were registered and transferred before its own courts, the *tijnshof* (*tijns* court) and the *leenhof* (feudal court) and transactions for these properties were not registered in the judicial districts.

2.6 Tithes (1400 – 1800)

Church law entitled the church to 10 % of the revenues of the land. The rights to collect tithes from undeveloped land resided with the bishop and through the Cope development process some of these tithes had been given out as feudal property to the locatores. A complete registration of the tithes in 1662 indicates that, on a revenue basis, 63 % of these tithes within the province were owned by (former) religious institutions, the rest was owned by about 100 persons. The collection rights of the tithes was generally sold by the owners through annual auctions. Often local farmers bought these and in many cases collected these tithes from their own neighbours. Sources indicate that tithe maps for the 5 minsters in Utrecht must have existed, but almost none of these have been found. The ones that were found, provide important, almost complete cadastral registrations for the area to which the tithe applied⁵⁶. Since this right to collect is one of the 3 rights associated with landownership, the reconstruction of tithe ownership is a part of this reconstruction.

2.7 Landownership (1400 – 1810)

Before giving out land for development to supply food and revenues, the bishop had a number of decisions to make. The land could be issued as feudal or allodial land and he could issue this to one of his religious organisations or to one his secular servants. He did all of the above. Not a lot of specifics are known of the process between “signing “ the Cope contract in 11th or 12th century and 1400, when ownership of land becomes visible.

Before land ownership can be established, one key question needs to be answered: who is the owner and who is registered in what sources. Unless the land had been given out as an allodium, the original

⁵⁴ In the archives of institutions, these “retro-acten” are sometimes found.

⁵⁵ *Hoftijns* relates to a *hof* or *curtis*, where land initially was used collectively. When the land from this *curtis* was issued to individual owners, this *tijns* must have been applied.

⁵⁶ Oudmunster, Wijk bij Duurstede, UA 223, 727

owner like the bishop or his vasals, retained some rights on the that land. The type of rights determine in whose name the land is registered.

Figure 9 shows an example of the hierarchy of ownership of land, issued for development as feudal land, to a locator. His successors would be shown as a vassal in the feudal register of the bishop generally not before 1382⁵⁷. If this vassal had issued this land to the colonists also as feudal land, their heirs or successors would be shown in the feudal registers of this vassal. If these colonists, rather than work the land, gave this land out as long lease land to a farmer, this farmer and his successors would be shown in the long lease registers as the owner. Had he decided to lease out the land to a farmer, the successor of the colonist would be shown as the owner. Many other examples on how these rights were split can be given, each creating a variation of figure 8. It also shows that one parcel can simultaneously be registered in more than one source and as not all these registrations are still available, not always the person shown in the tax registration can be found in an other registration. This is specifically the case for owners prior to 1600, when other sources are scarce.

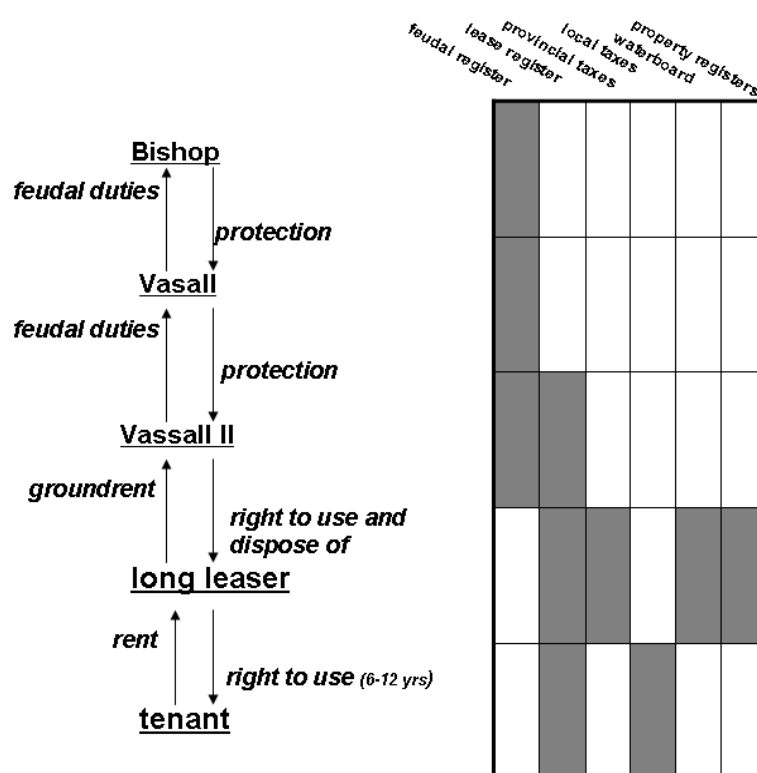


Figure 9: Hierarchy of property and its registration (example)

The Cope theory assumes that each of these colonists within a development receives a “hoeve” in exchange for his labour and this process would create judicial districts consisting of a number of “hoeven”. In the early 15th century, about 250 years after the development process, the Morgengeld registers do not clearly show the name of the user; it shows who paid the tax and that could be anyone. To establish if these owners were also using the land, an analysis of who these owners are is required,

⁵⁷ S Muller Fz, Registers en rekeningen van het bisdom Utrecht, 1891, p 662.

whether they owned land in other districts and if they also occur in other registrations. This will be possible only after this reconstruction is more complete.

The Morgengeld and Oudschildgeld registers show a very substantial land ownership by religious institutions. This ownership can be the result of a gift from a king or from the bishop for a Cope development and its role as the locator for that development. It can also be the result of a gift at the foundation of the convent or of a later purchase or gift from individual landowners. At the peak of their ownership, around the time of the Reformation a collective ownership by religious institutions of over 60 % of the land within the province has been estimated. This includes non productive land and land not registered in their name as is the case for feudal and long lease land. In order to provide a systematic way to establish the complete ownership per institution, property registers, per institution, need to be constructed for feudal, long lease and lease land⁵⁸. This will allow for easy checking if all these parcels have been incorporated into the GIS.

Attachment 2 shows a fragment of the feudal property of the bishop of Utrecht, as extracted from the GIS⁵⁹. These data come from different GIS-layers as will be explained in more detail in the next chapter and were combined, within the GIS, into a single register. The numbers relate to a printed repertory of the feudal belongings of the bishop⁶⁰. This extract can be expanded to provide for a full comparison between data in this the repertory and the data from the GIS, for example to check completeness of the latter..

2.8 Waterboards (1523 – 1840)

Local water management was done within the structure of the judicial districts, initially by digging the main dewatering ditches as well as the ditches between the “hoeven” and later through the addition of windmills; draining the excess water to one of the nearby rivers. All ditches and canals had an owner and when the water management of one district required excess water to go through another judicial district, land within that district had to be acquired to dig a ditch, or usage rights on exiting canals had to be established. It can be imagined that this could create tensions between the various judicial districts. Counteracting that, was the collective need to keep water from the rivers and the sea out. In several cases rivers had to be dammed before land development could be started. As the provincial landlord the bishop as well as the landlord of neighbouring Holland played an active role in the process of damming these rivers, building dikes and setting up the bodies to maintain these ⁶¹

Several waterboards existed within the province of Utrecht, each responsible for a section of a river or sea dike and they used rigorous systems for inspection and maintenance. The maintenance responsibility was shared between people, owning land located at the dike, some larger properties and judicial districts that were not located at the dike but were protected by it. For this purpose the dike was divided in sections called “hoefslagen”, and each of those hoofslagen had an owner that was responsible for the maintenance of “his” section of the dike. Each of these sections had a certain length and putting all of these sections in a spreadsheet, provides the ownership along the dike. An annual inspection of these hoofslagen and stiff penalties made the system of dike maintenance work.

⁵⁸ Not all of these institutions have left these type of registers behind and alternate sources need to be used for this purpose.

⁵⁹ How will be further discussed in the next chapter

⁶⁰ A J. Maris, Repertorium van de Stichtse leenprotocollen, 1956.

⁶¹ The first known use of the word “dike” dates from 893 AD, (source: De Lekdijk van Amerongen naar Vreeswijk, Ad van Bommel, 2009, p 23)



Figure 10: Section of the dike along the river Lek West of Wijk bij Duurstede.

Figure 10 shows a section of the dike. It shows that the dike had been built on (in 1832 still) private property and that it is located, in some places, hundreds of meters away from the summer bed of the river, allowing for flood planes in the spring. In the summer, these flood planes were highly desired and fertile sources for high quality grazing. Obviously these flood planes are exempted from dike maintenance. For larger parcels as for example shown on the west side of the map, the responsibility for a part of the dike maintenance had been given to the earlier mentioned judicial districts, reducing the maintenance burden for the owner of the land. Some districts were protected by more than one dike, each under different management and they were charged several times. Complete registrations for the owners of these *hoefslagen* are still available, some going back to 1523 and running beyond 1832, overlapping with the Dutch cadastre and these registrations, most of which have been transcribed into complete registrations per *hoefslag* and they form an important source for this reconstruction.

2.9 Notaries (1560 – 1810)

The use of a notary for transactions of property must not have been mandatory, as many transactions shown in transport registers cannot be found in the notarial registers. Abstracts for a very large number of notarial deeds for property or lease transactions can be searched and accessed through the internet on the websites of various archives. These abstracts provide information on the owners, size, location and neighbours of the property. The original registers and the deeds can be consulted at the archives only or via the internet after paying a download fee⁶². In many cases the abstracts, however, provides enough information on the transaction for the purpose of this reconstruction.

⁶² Consulting these original registers requires a lot of time, using the download option is expensive, reducing this source, unfortunately, to an “emergencies only” source.

2.10 Peat and clay

As mentioned in chapter 1, parts of the province of Utrecht, before the Cope developments started, had been covered under a layer of peat. Initially this peat was won as fuel on a small scale, for private use as well as for trade, not really effecting parcel- and ownership structure as the Oudschildgeld registers show. The right to win a certain amount of peat was often sold to a person and later this land was used again for agriculture. Bog which was dredged from below the water level, left the owners with water only. In the middle of the 18th century, when the demand for fuel increases, the owners rather than dredging themselves, sold their land in small portions to “peat farmers”, who did the dredging, dried the peat and cut this into briquettes to be sold. After the bog had been dredged these peat farmers often left, leaving the land to the church or to the community. In a number of cases this land was later reclaimed, new ditches dug and new windmills build. When this happened after 1832, the cadastral maps still showed the original parcel structure, when it happened before 1832, the old parcel structure disappeared and this structure has to be reconstructed again. Not enough of this has been done yet to determine if this is feasible. In other cases the land was not reclaimed and these peat pits were used to win sand and later used for recreational purposes and potentially a new peat cycle is starting there.

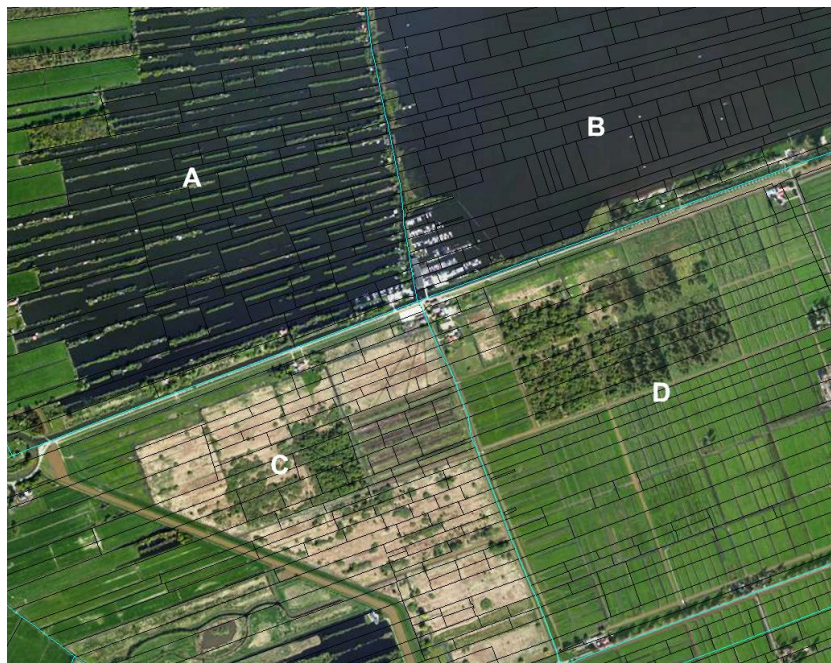


Figure 11: Old and new patterns

Figure 11 shows the parcel map combined with the current situation as shown in Bing⁶³. Four different landscapes resulting from the dredging of bog are visible, sections A and B contain mostly water; in section A the dikes that were used to dry and cut the peat are still present, in section B these dikes which still were shown on the 1832 cadastral maps have disappeared, possibly because of sand dredging. Section C has only been used partially to win peat and the left half still shows the original parcel structure and section D and the right half of section C has been reclaimed and redeveloped as agricultural land with a different parcel structure. The black lines show the property distribution in 1832.

⁶³ Bing.com, the aerial maps provided by this webservice can be imported into the GIS as a separate layer and by making a layer “transparent” multiple layers can be viewed.

On a smaller scale and with less effect, the winning of clay took place, along the rivers, feeding brick and tile factories located there.

The activities around the winning of peat and clay provide few data that can be used for this reconstruction; these activities caused larger properties to be broken up into very small ones as is visible in figure 11, making a reconstruction of ownership for each of these parcels between the middle of the 18th century and the 1832 cadastre almost impossible. Help for this however is being provided by the council of some of these districts. Confronted with this break up of property and the difficulties this created in keeping track of ownership for the collection of the land tax, cadastral maps and associated registers have been produced. These registers and maps could be connected to the earlier Oudschild registration. Possibly there are also data and maps available for those areas that have been reclaimed and redeveloped prior to the 1832 cadastral registration.

2.11 The Reformation (1580 - 1586)

Landownership of religious institutions, between 1400 and 1599 and possibly also before that period, increases as a result of gifts and purchases, as is also shown when comparing the two tax registrations. The Reformation in the 2nd half of the 16th century stopped the process of land acquisition by the religious institutions. The new owners of these expropriated properties, de Staten van Utrecht⁶⁴, must have required from these institutions to provide complete property registers. This makes these documents a prime source to serve as the property register for these institutions as mentioned in 2.6. These properties were still being registered in the Oudschilgeld registers in the name of the religious institutions in the Oudschilgeld registers and parcels from these two registers can easily be linked and in many cases be located on the map.

2.12 Liquidation of the state owned properties (1789 - 1832)

Already before the French occupation, the process of selling these government owned lands had started. This process accelerated after the French invasion in 1795. During 1797 the first of these large scale auctions took place, selling 4366 morgen (3700 hectares) for 646.000 guilders or an average of 148 guilders per morgen (respectively 263.600 and 67 €). This auction sold the remaining property of 5 former convents, whose belongings had been administered by the Ridderschap of Utrecht⁶⁵.

After Napoleon's defeat at Waterloo, the kingdom of Holland, as established under his brother Louis Napoleon, continued to exist. Under the new government, a lot of the power which had resided with the provinces was centralized, including raising the land taxes and the ownership of the belongings of the previous religious institutions. The first resulted in the new cadastre, the second in an acceleration of selling these farms, forests, lands, tithes and other property, which had already started under Louis Napoleon. Between 1820 and 1830 these properties were sold in a number of large auctions and this was completed around the time that the new cadastre of 1832 became operational. The majority of the buyers of these properties still owned this land in 1832 and finding these properties in the new cadastre is easy. The amount of paperwork associated with these auctions is overwhelming and finding the right documents, providing the name of the new owner is sometimes a challenge. The properties sold during these auctions represented almost the complete belongings of the former five minsters of the city of Utrecht⁶⁶. These auctions also sold land that had belonged to the previous stadtholder of the

⁶⁴ See note 42

⁶⁵ An organization representing nobility.

⁶⁶ Most of the property which had belonged to the bishop had already been sold, the rest and some other property of convents had also been added to these auctions.

Dutch Republic, who fled to England after the French invasion, The new and initially republican, government declared his possessions state property and it was included in these auctions. Not all these belongings were sold, as figure 12 shows some goods belonging to the Prince of Oranje.

	Owner	morgen
1	Gemeente Soest	2.096
2	Participanten van de Leusderberg	1.983
3	George Godart Henry van Reede	1.855
4	Petrus Jodocus Oosthuizen weduwe	1.684
5	Paulus Willem Bosch van Drakestein	1.619
6	Johan Huydecoper	1.148
7	Hubert Matthijs Adriaan Jan van Asch van Wijck	1.141
8	Johan Steengragt	1.100
9	De Mijdrechts Droogmaking eerste bedijking	1.067
10	Joost Gerard Godart Taats van Amerongen	1.034
11	Duitse Orde	978
12	Gemeente Leersum	902
13	Frans Nicolaas van Bern	890
14	ZKH de Prins van Oranje	848
15	Maurits Jacob van Eijck	836
16	Gemeente Amersfoort	803
17	Andries Cornelis Willem Munter	765
18	Gijsbert Carel Cornelis Jan van Lynden	758
19	Hendrik Ravee	732
20	Johan Daniel Cornelis Carel Willem d' Ablaing	696

Figuur 12: Top 20 landowners in Utrecht in 1832

A few comments should be made to this list:

A number of municipalities (Gemeenten), Soest, Leersum and Amersfoort show up in this list, These properties represent mostly common and undeveloped land.

The owner shown under 9 was a company that had acquired land and water after the “peatfarming” in Mijldrecht had been completed.. This land had been redeveloped and was being rented out for farming. The Teutonic Order (Duitse Orde) was one of the very few former religious institutions that still owned land; the Order changed religion after the reformation and it largely escaped the expropriation and the large sell-off.

2.13 Conclusions.

In the previous chapter the various types of sources have been analyzed for the purpose of determining the usability and applicability of these sources to this reconstruction. The list shows many potential sources. For each judicial district the availability of these sources show large differences. This requires, before starting the reconstruction within a certain district, to analyze the availability of these data for this district, what needs to be transcribed and what additional resources, not shown in the above listing are also available. Some districts require a very fine combing of the sources, others require hardly any. Some sources, not shown in this list, might still contain very valuable information for the reconstruction.

One source which has not been mentioned in the above list, are the lease registers of the various institutions. This reconstruction is one of ownership and generally lease registers are documenting the

user, often without providing any specifics on the property rented out. Some of these lease registers are however very complete and available for use in this reconstruction if needed. In general, however, these registers and the names of tenants are only used as a last resource, when the listed registrations do not provide the information required to "complete" a district.

During the 400 years of this reconstruction, names and ways to write these names have changed. In the later versions of the Oudschild registers, names copied from the earlier registers were changed, reflecting the changes in the Dutch language not in the name. Also differences in names have been observed for the same person recorded in different parallel registrations. Earlier, we mentioned that searchability of all data is a key requirement and therefore in the process of transcribing the sources, the number of versions of first and last names has been reduced. This has not resulted in one universal version per last name, as many versions of one last name continue to exist today. As all data have been recorded, including the source, the spelling of these names in the original source can easily be checked.

3. The System

Krenzlin, Balzer and Hartmann have demonstrated that reconstruction of land ownership can be achieved without the use of a GIS, mostly because no GIS was available, they certainly did not want to prove that point. This reconstruction also started without using a GIS, using A3 format copies of cadastral maps, numbering the parcels and a spreadsheet to record the attributes per parcel. The capability to input, store and search data in a spreadsheet probably exceeds that of the dbf-database used in a GIS and sometimes it is required to export data from the GIS into an external spreadsheet for further analysis. In a discussion at the Geography Department at the University of Utrecht, I was told, not recommended, to use a GIS for this purpose, which I did, never regretting it. When this reconstruction started, about 10 years ago, the capabilities of a GIS were less than what they are today and hopefully these capabilities will continue to grow. Today we must conclude that a decision to not use a GIS for this reconstruction, probably would either have slowed down the reconstruction process or killed it altogether. The ability to use the map for the research itself and not only as a tool to show results, beats any advantage that a spreadsheet might have offered. A GIS is a toolbox with an enormous amount of tools, only part of which are needed, so far, for this reconstruction. The essential advantage in using a GIS, is to have a map of the research area available, with the right granularity. A parcel map as required for this research did not exist and had to be constructed, as will be discussed in the next section.

3.1 GIS.

A GIS is a database system, combining geographical data with attribute data. The geographical data are a set of coordinates for an object. This object can be a point, a line, a polyline or a polygon. Each of these objects consists of a number of points called nodes. The coordinates of these nodes allow the GIS to calculate the length of a line and the size of an area. A digital parcel map of the province of Utrecht is a collection of all parcels located within the borders of this province as defined by the 1832 cadastre⁶⁷. The construction of a parcel map requires the following steps:

1. Selecting the map or maps to be used to construct the basemap, in this case the 1832 cadastral maps for the province of Utrecht were used, totalling about 1000,
2. Selecting the vectorized map to be used to position these cadastral maps and for this the top10 vector maps have been used⁶⁸.
3. Geo-reference the cadastral maps, involving turning, matching the map north with the GIS north, selecting a number of points from the cadastral maps which correspond with points from the vectorized map and match these⁶⁹.
4. Group adjacent cadastral parcels from the same owner into parcels, using an adequate number of nodes.

⁶⁷ The borders of the area where the bishop had jurisdiction and owned land were located outside these borders and in some cases these areas have been included in the reconstruction.

⁶⁸ Vector or vectorized maps are digital maps that only can be created using a GIS. Creating a vectorized map can be done in many ways, including tracing directly from Google Earth. Every point drawn that way copies the coordinates from Google Earth. This allows a GIS to draw maps using these points. Cadastres use these maps to store and track information of current land ownership. These top 10 vector maps have been made available for this reconstruction by the Province of Utrecht.

⁶⁹ Turning the maps is done outside the GIS, after that, these maps are imported into the GIS, where these can be “stretched” for the purpose of matching these corresponding points.

5. Once a parcel has been constructed this way, it has coordinates and dimensions; also a “slot” in the database has been generated.
6. During this phase, the names of the owners and the names of the municipalities and other subdivisions as shown in the cadastre are being added to the GIS Database.
7. Adjacent parcels need to be sharing nodes to prevent gaps or overlaps between parcels. Figure 13 shows a part of Maarssebroek, as shown on a 1832 cadastral map. A few hundred nodes create a digital picture of these roughly 50 parcels.

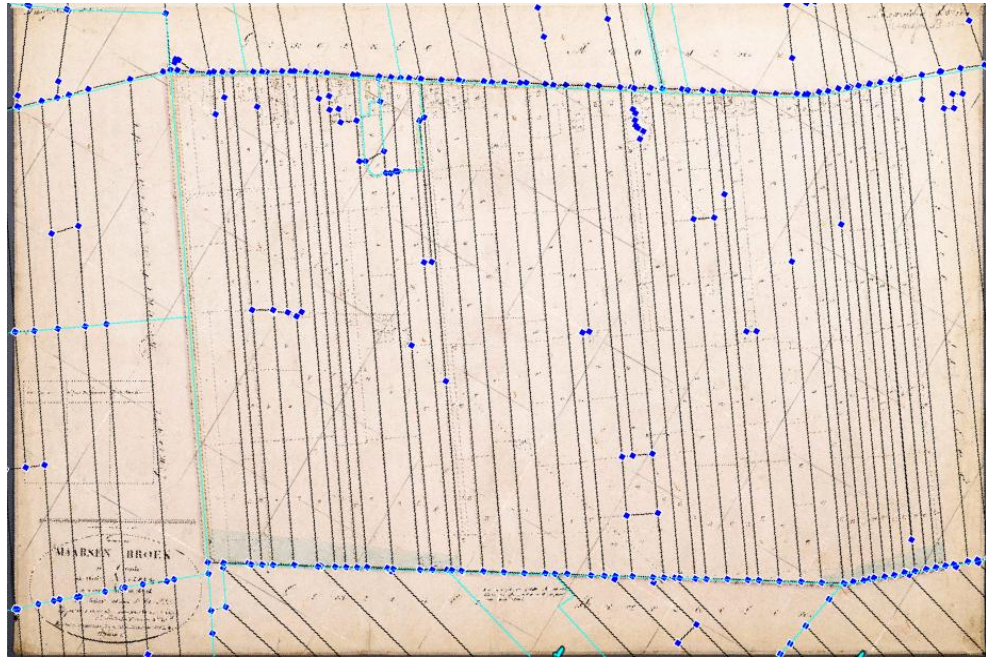


Figure 13: Maarssebroek in Nodes (blue).

8. During the reconstruction it will become clear that some properties shown in the 1832 cadastre were formed by combining two or more earlier properties, these properties can be easily split within the GIS to show the earlier parcel and ownership structure.

For the reconstruction process geographical and topographical data of the research area are very important data. Also data which subdivide the province into smaller sections like cadastral municipalities and polders need to be imported into the GIS. As parcels, in the various sources, are described as “lying within ..., next to ..., or close to....”, these supportive data need to be collected and structured in separate map layers and make these data available on the map for the reconstruction of other parcels. Most of these data become only available during the reconstruction process and they data create their own, unique, databases. Many of these names did not exist in 1400 and they came and went. No effort has been made to try to date these names. Separate map layers with their own databases have been set up for:

- Parcels
- Parishes
- Judicial districts
- Developments and polders
- Tithes
- Churches

- Castles and houses
- Other buildings
- Farmhouses
- Windmills
- Rivers and natural waterways
- Ditches and canals
- Dikes

The GIS will allow any of these layers to be shown as separate maps as well as in combination with other map layers.

The amount and type of data to be kept for each of these layers will be different, resulting in different formats for each of these databases. Data from multiple tables can be combined and data can be imported from, combined with and exported to other, external, programs for further analysis or to create reports..

The capabilities of a GIS changes continuously through a process of software updates, based on customer and industry needs. When the work on this reconstruction started, a maximum of 4000 characters could be used, in the database, for every object. This had made it necessary to split the parcel database, since 4000 characters turned out to be un-sufficient . Recently the 4000 was increased to 64.000, removing all these limits and allowing a recombination of these databases again.

Through queries, objects can be selected from these layers, for which the attributes contain certain words, numbers of combinations thereof and the results of these queries can be shown in separate maps⁷⁰.

3.2 HISGIS

A HISGIS has been defined as “a toolkit enabling historians to structure, integrate, manipulate, analyse and display data in a data rich environment”⁷¹.

Preferably all of the data, which are collected for the purpose of the reconstruction should be stored and kept within the GIS in one of the layer/databases. There are a number of reasons why this cannot be achieved. Most of the parcel attributes come from original (non searchable) sources, in most cases not providing enough information to put that parcel on the map and information from other sources is required to achieve that. The data from these sources need to be captured by transcription in such a way that, when at a later moment the parcel can be placed on the map, these data can be copy/pasted into the GIS. All documents containing these transcribed data need to be searchable. Some of the datasets require the ability to sort or filter and therefore need to be stored in a spreadsheet, for others a word processing document is sufficient. The digitally available catalogues, that archives provide on their websites, are a very useful tool to add these transcriptions to (in a different colour) .

Together all of these transcriptions provide for a searchable “parking space” for these data until they can be processed into the GIS. This parking space has to provide adequate linking to the original sources and to the data in the GIS⁷². Data required from searchable transcriptions by others do not

⁷⁰ For more complete description of a GIS and HISGIS see Ian N. Gregory and Paul Selles: *Historical GIS*, Cambridge 2007.

⁷¹ As 46

⁷² The earlier mentioned limits on the database size, precluded a complete source reference for all data in the GIS, instead in a number of cases a group reference has been used, for example all landtax data have OSG as the

require any additional work other than the addition of data from later sources⁷³. Scanned versions of text can be converted to word processing documents. Photographed sources need to be indexed for access, use and reference. In order to put a parcel, described in the sources on the map, in most case information from multiple sources needs to be combined, some of these data might already be available in the GIS, where they can be found using a query⁷⁴. When even after the use of multiple sources, the location on the map cannot be completely ascertained, it should be put into the GIS with a question mark. The process of retrieving these data and combining these data with other data, including the information on neighbours and sometimes spanning centuries as well as family relations between the various, consecutive owners should not be wasted, even when these data are not conclusive. The question mark allows those parcels to be searched from the database through a query and the question mark can be removed when additional information makes this possible.

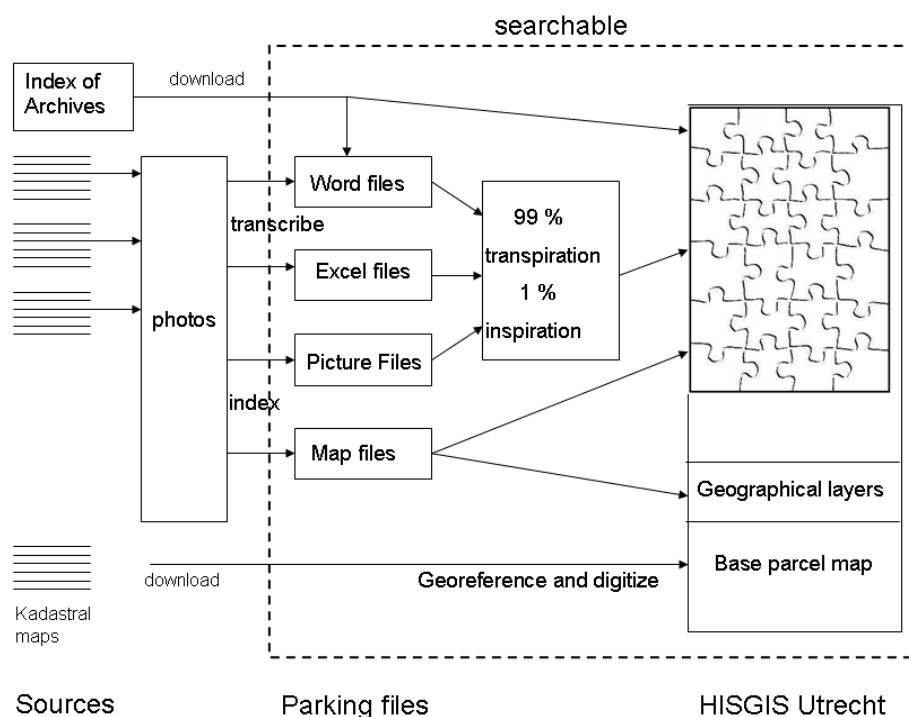


Figure 14: Map of the reconstruction process

Once a parcel has been mapped, more attribute data can be added to the database, and in a number of cases this can be done directly from photos of the original source, eliminating the need for transcribing this source. This applies specifically for data from the time of some of the “key” registrations, which will be discussed in the next chapter. A digital camera with a large memory is an essential tool for this research.

reference. A separate document allows finding the source document or in this case the correct folder containing the photographs thereof.

⁷³ The printed and digital repertoires of the feudal registers are not complete and typically do not use the registrations after 1650. The later data can and in many cases need to be added to these repertoires.

⁷⁴ A query looks for those parcels from the database, that meet the requirements as programmed into the query. These queries can look at different databases simultaneously and extract and combine these data into a separate database.

Info Tool

Size: 4,85

Owner1: Bisschop

Sub:

Relationship: Leen

ID: 127,000

Owner2:

Relationship2:

ID2: 0,000

recognition_tax:

Rec_Tax_ID: 0,000

Judicial_district: Houten en 't Goy

Development: Westrum

Dike_body: Lekdijk Bovendams

Description: Huis met een halve hoeve. 1409: belenders Gerrit van Oostrum's erven en Peter van Golberdingen met leen van Montfoort.

Name: Huis Wickenbrug

Maps: TA 2166-3

_1380: 1394: Hubert Hubertsz van Goberdingen

_1395: 1400: Peter van Goberdingen

_1410: 1409: Willem van Oostrum. 1421: Elias Willemsz van Oostrum

_1425: 1434: Sophia Willems van Oostrum e.v. Johan Daamsz van Schadewijk

_1440:

_1455: 1461: Hadewich Johansdr Bolen e.v. Dirck van Oostrum

_1470:

_1485: 1487: Gerrit Dircksz van Oostrum

_1500: 1511: Claas Dircksz van Oostrum

_1515: 1523: Cornelis Claasz van Oostrum

_1530: 1530: Dirck Claasz van Oostrum

_1545: 1550: Dirck Willemsz van Oostrum

_1560: 1579: Maria van Oostrum

_1575: 1582: Dirck van Oostrum

_1590: 1582: Johan Dircksz van Oostrum

_1605: 1604: Willem van Oostrum

_1620: 1630: Lubbert van Westrenen e.v. Margaretha Pellicorne

_1635:

_1650: 1657: Martinus van Westrenen verkoopt het deel N van de Wickenburgseweg

_1665: 1672: Martinus van Westrenen aan Hendrick Quint en Nicolaas Hamel (UA 254, 36)

_1680: 1681: J van Westrenen (Kaart). 1687: Ferdinand Hatting

_1695:

_1710:

_1725:

_1740: 1741: Margaretha van Suchtelen

_1755: 1758: Jan Wttewaai v. (UA U184a23, 284)

_1770: 1760: Ferdinand Wttewaai

_1785:

_1800:

_1815:

_1832: Gerard Wttewaai

Liquidatie_bron:

Liquidatie_code:

Comments: * Almelo spreekt van 19 M

Landtax_1440: 0

Landtax_1536: 270

Nieuwe_Blafter: 0

House_farm_number: 0

Hoeve_huisnr_krtmr2: 0

Nr_op_Kaart: 0

Recognition_tax_2:

Rec_Tax_ID2: 0,000

Municipality_1832: Houten

Quarter: OK

<< >> List

vertaling

Figure 15: Info table set up. The table has recently been somewhat redesigned after the limit of a maximum of 4000 characters had been removed.

The data that are being kept in the GIS databases can be made visible in different ways, most of which parcel as these are being extracted from the database. If desired the format can be changed and lines can be added or removed.

The complete data base containing the data for 30.000 parcels, each (recently) with a potential of 64.000 characters is too large for effective use and sections from this database normally are extracted, containing the data for one judicial district, one owner or one registration. Data that are added to these smaller databases become part of the large database. Data can be added to individual fields of an individual parcel or simultaneously to a number of parcels.

The sources show many different formats and amounts of detail in describing a parcel. The “standard” version is one that gives the size of the parcel, the location within a judicial district or parish and data on adjacent parcels with the names of the owner and names of any roads or waterways. Preferably all 4 wind directions are addressed. Some sources also provide the name of the earlier owners. In the process of registration or writing new ownership documents, the data were very often copied from older documents and are “petrified” and of unknown age. All of these data need to be captured in the GIS.

A parcel is deemed to be complete when the link with the following registrations has been established:

- 1) Is has been located on the map and connected to the cadastre of 1832,
- 2) the sequential number from the 1444/1459 Morgengeld registration is known,
- 3) the same for the 1536 Oudschilgeld registration,
- 4) for land owned by institutions, a number connecting the parcel to the property register or another document, e.g. a charter, from the archive of that institution.

The registrations under 2) and 3) can be extracted from the database per judicial district and sorted based on the sequential number for a check of completeness or mistakes. The same applies to the registration under 4). Also numbers used in publications by others can be used here as is shown in attachment 2.

There is no intention (yet) to add all available information to these info tables. In general terms the data are being collected to support the reconstruction process. Since it is not possible to predict what might be needed, digital, easily available data are added routinely as well as the data of some “key dates” as discussed in the next chapter.

A GIS is a database system and although it can be published on a website, it is not a publication. It provides a very effective filing capabilities for historical data, allowing to publish these data in a number of different ways, as a database, in text or as a map. Because all the GIS data reside in one system, these data can easily be shared with others for other or additional research. The investment required for the construction of a digital parcel map is very substantial and donating this work to someone else, requires a good reason. Currently part of the results of the research, from 1530 onwards, data are available on the website of the Fryske Akademie and this is being updated a few times per year and hopefully a continuous updating process can be achieved soon⁷⁵.

This digital filing system can also be lost easily and adequate precautions need to be taken in the form of different back-ups.

⁷⁵ WWW.HISGIS.nl

4. The Reconstruction process

4.1. Earlier research, pre GIS

In the introduction the earlier, pre-GIS research of Krenzlin, Balzer and Hartmann has been mentioned as examples of land ownership reconstruction.

Balzer, 1974/75, reconstructed the land ownership of 11 religious organizations that owned land around Paderborn (Ger). Although a GIS was not yet available, he also noted the changed role for the map in the reconstruction process. It was not a picture any more showing results, it also was a tool for the research itself and a source of information⁷⁶. Reconstructing the landownership belonging to a limited number of institutions has some advantages. The registration of this land is available and potentially complete, it has one major drawback: one of the key attributes for the reconstruction, the information from adjacent parcels not owned by these 11 owners is not available. As with a jigsaw puzzle reconstruction depends for a very large factor on the information from adjacent parcels; try laying one with half the pieces. Another difference is that during the Reformation the properties of religious institutions around Paderborn was not expropriated and partially sold as was the case for Utrecht. In Paderborn the religious institutions were still listed in the text cadastre of 1782 as the owners and using the available sources, these parcels could be connected to the Prussian cadastre of 1830/31. His book and associated map show the limitations that books and paper maps represent for this type of research, specifically in presenting the data and results. The single map is an essential tool to present the geographic location of the properties, owned by the various institutions; linking individual parcels on the map with the data and text in the book is difficult⁷⁷. Also as a basis for further research, the “book and single map” format does not provide an easy start and today that would definitely require converting all these data and map into a GIS.

⁷⁶ Balzer P 16-17

⁷⁷ Financial considerations limited the number of maps in the book, as Professor Balzer mentioned in a telephone conversation.



Figuur 16: Property distribution in 1300 around Paderborn (Balzer)

Hartman⁷⁸, 1986, reconstructed the ownership of the judicial districts of Eysden en Breust close to Maastricht (NL) in 1619. Also here the Dutch cadastre of 1832 served as the base map. His reconstruction was done using the data of a complete registration of land, done by the owners within these districts. The data provided for these parcels contained sufficient geographical information including the names of the neighbours on both sides. Together with information from additional sources the ownership within these 2 districts could almost be completely reconstructed.

Both these reconstructions would certainly have benefitted from being able to use a GIS.

4.2 Earlier research, post GIS

The Fryske Akademie reconstructed landownership for the whole province of Friesland using a GIS, on the basis of the availability of land tax registrations between 1640 and 1840. In the later years the cadastral numbers were added to these registers. The Dutch cadastre of 1832 was also here used to construct a digital cadastral map. This cadastral map as well as the tax registrations and other layers are available on their website, as well as those for several other provinces⁷⁹.

In the UK, using information from the Domesday book, reconstruction of landownership is ongoing on the basis of data from these two books, a land survey which was started in 1086, by William the Conqueror to identify the taxability of his new belongings.⁸⁰ Given the extend of these belongings, it probably will be some time before the mapping of the books' contents will be completed.

4.3 This reconstruction

In an ideal world, the digital base map should be available, showing the 1832 owners and relevant topographical information, prior to the start of the reconstruction work. All sources should be available: digital pre-cadastral maps, digital transcriptions of the land tax registers, transcriptions and repertories of the all the estates as owned by the various institutions and complete transcriptions of all transport registers for each of the judicial districts as well as all the other information as discussed in

⁷⁸ Reconstruction van een Middeleeuws landschap (Reconstruction of a Medieval landscape), Assen/Maastricht 1986.

⁷⁹ As 73.

⁸⁰ WWW.Domesdaybook.co.uk

chapter 2. The consequences of this plan, would be that first many years would have to be spend on digitizing all the cadastral maps, followed by several years spent only on converting all the sources to searchable ones, before the reconstruction of the first judicial district could be started. A decision to start work on one judicial district and finish that, before work would start on a second, would result in having to consult many sources and cherry pick these sources for information for one judicial district only. Clearly between the these two extreme scenarios a middle way had to be found. Collecting data from the tax registers can be done per district, building property registers for a religious institution, can start with a list of judicial districts where these institutions owned property. These lists can be searched and the specific parcel information per district can be added when required. The original sources can be photographed to bring these within reach. This paper does not intend to write a manual for the reconstruction of land ownership, as it probably would result in a manual per judicial district. Every reconstruction however should start with an exploratory number of steps and these steps have, for those judicial districts that have been developed as a Cope, resulted in an efficient way to connect the Morgengeld registration to the 1832 cadastre, in a number of cases. These steps are per district:

1. Add all information from pre-cadastral maps available for this judicial district to the GIS,
2. search the property registers of the institutions owning the land shown on these pre-cadastral maps, for more information on these parcels and its neighbours,
3. Search the notarial and transport registers for any “low hanging fruit” allowing to bridge the gap between 1810 and 1832. This generally provides the owner for a number of parcels before 1800, possibly with information on neighbours. This would allow a connection with a late registration of the Oudschildgeld and through that, the 1536 owner can be established.
4. Search the feudal registers for any “low hanging fruit” within this district. These registers might first need to be completed. All feudal land was declared allodial property, early during the French occupation so most of the feudal registrations continue until about 1790.
5. As a result of these actions, the owners for a number of parcels in 1536 likely have been identified. If these owners are an institution, that will allow finding information on that parcel in the data kept in the archives of that institution and possibly its neighbours and this might provide a link to the Morgengeld registers and through this the ownership for a number of parcels in the middle of the 15th century can be established.
6. This ownership together with the sequence of quarter, half and whole hoeven on the map, the earlier mentioned footprint and compare this to the sequence of parcel sizes in the Morgengeld registration. If it matches and it did in the case of Maarssenbroek and other judicial districts, the link has been established. Unfortunately there are many districts where that is not the case or that simple.

Up till this point the reconstruction still shows all the elements of building a card house. The reconstruction for Maarssenbroek and other districts could be done efficiently using the above mentioned set of steps, a lot of work still needs to be done, including relating the parcels to the Oudschildgeld and property registers. Many sources need to be consulted for that purpose and sometimes sources need to be consulted several times. By nature, however, the reconstruction process, is to some extent, self correcting. Within a judicial district, the number of parcels is limited, a few hundred, and the tax registers provide good information on the amount of land and the amount of parcels per district and a parcel can only have one owner. Also the information on the owners of adjacent parcels as provided through a parcel has to match with the information found for these adjacent parcels. The other point to make is that the people that were responsible for the administration had very limited resources and would also benefit from a systematic set up of their administrative system and trying to determine what “their system” was, should always be a priority. Adding more data to parcels, specifically data that include information on the neighbours will reinforce the card house, or show mistakes.

The reconstruction is also helped by focussing the process around some key dates, which allow linking information from tax registers to the property sources and date likes 1444, 1459, 1536, 1599 and 1686 are some obvious ones.

There are a number of other systematic approaches like working in one judicial district or one owner at the time. There are also many reasons to sometimes deviate from that and use an opportunistic approach..

This reconstruction is not complete and will take a lot more work. Attachment 3 shows the current status. This listing provides the total of feudal, long lease and lease land for the 50 largest land owners that together owned more than 90 % of the land.. The ownership for all these parcels in 1400 has not yet been established and for some that might never be achieved. The results so far certainly justify to continue on the basis as described above.

5. Summary and conclusions.

There can be many reasons to start a reconstruction of land ownership. One could be to prove that it can be done. Others already did that. Another could be to prove a theory. I did not have one when this reconstruction was started, I had not read theories developed by others on subjects like land development or the development of property rights and neither was I aware of any reconstruction work done by others.

The selection of Utrecht as the geographical area for this research was driven by familiarity with this province, a result of family research and because my name originates in this province⁸¹. The dual role of the bishop of Utrecht certainly presented an intriguing aspect as well as the fact that during the family research an individual farm of my ancestors could never be located on the map. 1400, as the target for the reconstruction, has been mostly based on data availability, as many of the feudal, lease and tax registers started around that time.

The risk of starting a research project without a clearly defined goal, is that this project ends with a pile of data and no conclusions. To a certain extent that is the result of this work and as such it can be described as a half product. Other, more targeted studies, could benefit from this research and examples could be in further developing the user side of the land; was the 16 morgen hoeve, indeed sufficient to generate adequate income for a family or was it merely a physical entity, created by land development factors. The registration of tithes allows to reconstruct the products grown on these properties and those data can be used for a further assessments of the economics of farming, potentially over time and there could be more. Without a theory driving the research, the research findings and the conclusions from these findings must become the driver for it.

⁸¹ Oosterheem and later Oostrum were names of farms, a tithe and possibly of a development near the city of Houten.

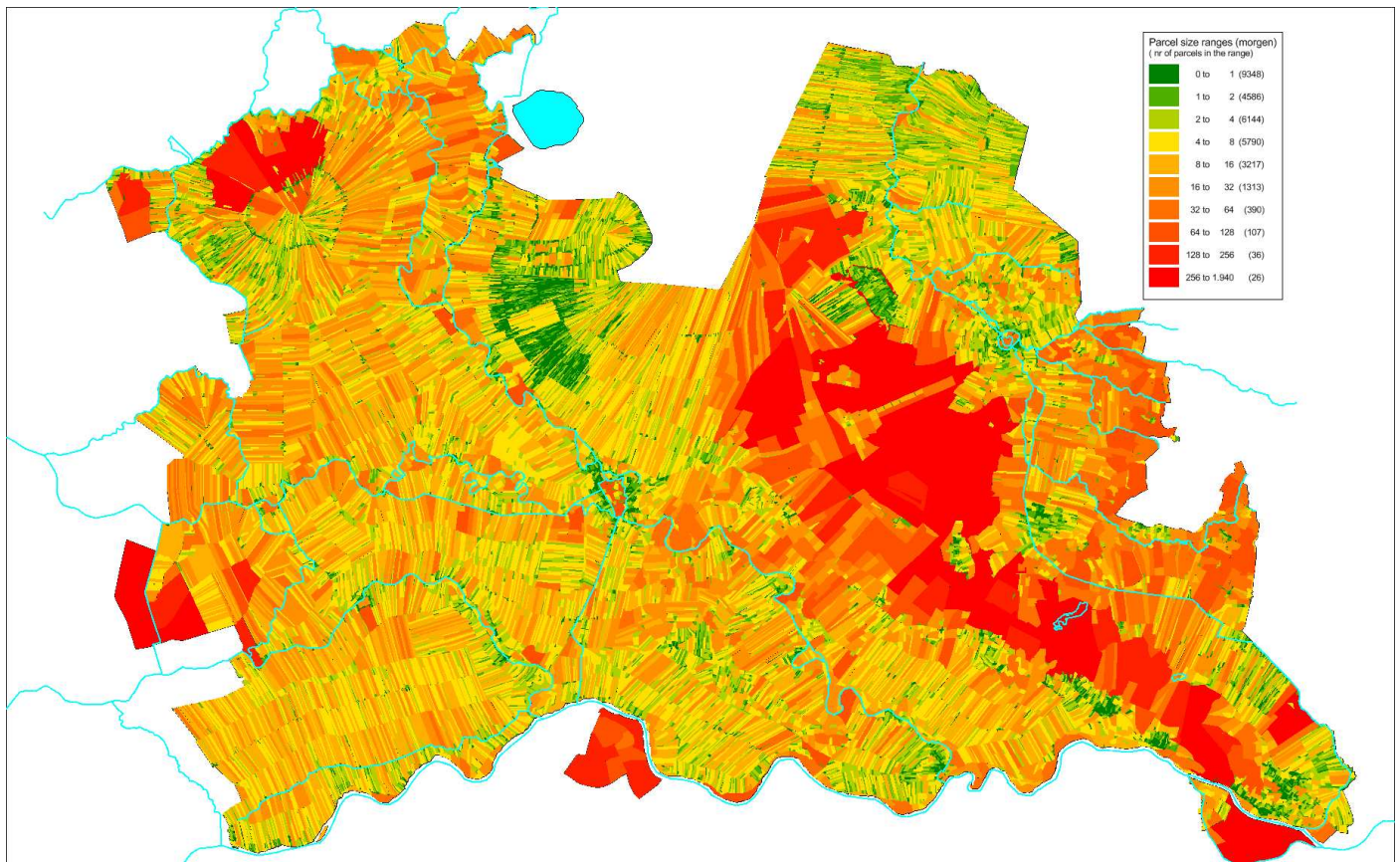


Figure 17: Parcel size in 10 size ranges. These ranges start from 0 -1 morgen (dark green), the next ones are 1 - 2 morgen, 2 - 4 , 4 - 8, 8 - 16 etc. The last range includes parcels > 256 morgen. (The individual parcel boundaries have been removed)

An abstract look at this research project shows a sorting process, which adds data to parcels and combines these into a large database. This allows these data to be analyzed, combined, compared, filtered and shown in maps. Some of these maps are tools, required for the reconstruction process, like the parish map and the map of the judicial districts in 1400. Others, like the maps showing the ownership of tithes, tijns⁸² and the control over the land and also the judicial districts have become the objective for this research. Once these maps are complete, the data from these four maps can be combined and this ownership-structure that will potentially connect to the development process and the ownership prior to these developments and the gifts which formed the basis for these land rights.

A pattern, which seems to be evolving from the data, are the differences in parcel size and ownership structure between Cope and non-Cope developments. This has not been fully analyzed yet, as it requires the reconstruction of ownership to be more complete. Trying to establish this has certainly become an objective for this reconstruction, and also here more could develop, once more parcels and data fall on its place. Figure 17 shows the about 30.000 parcels within Utrecht sorted within 10 size ranges and even with the reconstruction process not finished, certain patterns start to become visible. A lot of the small, green, parcels in figure 17 have been created in the process of peat farming, other are much older and possibly can be traced back to older, collective forms of farming.

⁸² See page 17

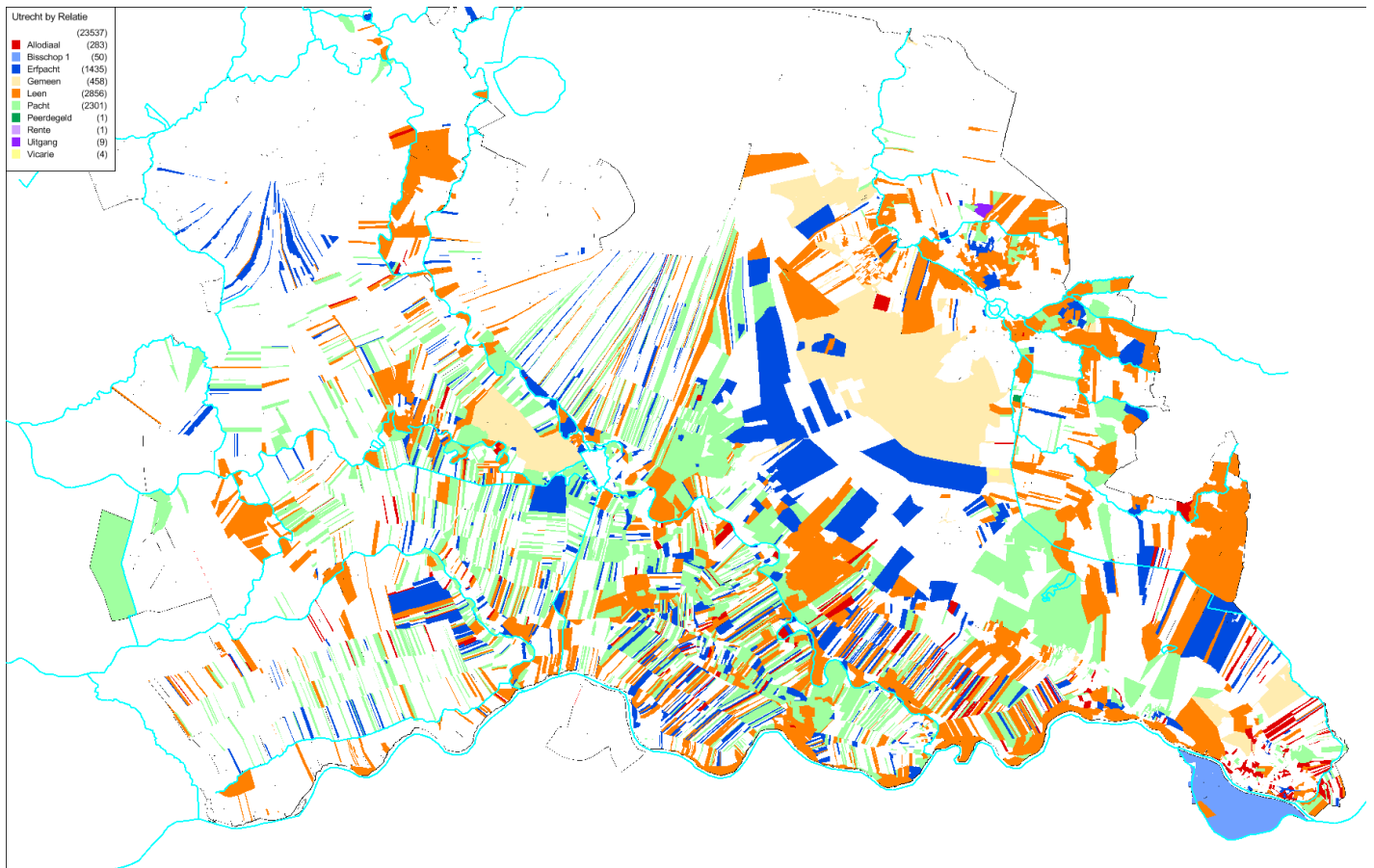


Figure 18: Allodial land (red), feudal land (ocre) , long lease land (dark blue), lease land (green) and common land (yellow).

A second pattern evolving from the data is shown in figure 18, where five categories of land are shown, allodial land, feudal land, long lease land, lease land and common land⁸³. As in figure 17, the property boundaries of the parcels have been removed from this map so the map shows clusters of land in these categories. Still a pattern showing differences between the western half of the provinces, where the Cope was the predominant development process and the eastern part of the province is becoming visible and possible a combination of the images from figures 17 and 18 might tell us whether the type of ownership structure has impacted the process of dividing the parcel structure as established during the Cope development process and if the land along the rivers has a different ownership structure, because the development of that land took place earlier and might show traces from earlier, less free, ownership structures.

So although the project started without a clear guidance from an objective or theory, the data from the research have started to generate that direction and the project will continue, probably for some time, along these objectives and potentially develop more.

⁸³ As mentioned earlier, a parcel of land can simultaneously fall in more than one of these categories. This map has been constructed to show the “highest” of the categories as shown in figure 9. In this picture the lease land applies to land leased out by institutions only. One category is missing from this map: land of which the owner is also the user. As mentioned earlier the Morgengeld registers do not clearly show the users making it almost impossible to determine that.

6. Attachments

Attachment 1.

The Oudschildgeld registration in 1536 for Maarssenbroek. (UA, Financiële Instellingen, 1674)

Fol. Nr	Nr	Owner	User	morgen	Oudschild	Stivers
91	1	Cellebroeders te Utrecht	Joosgen Willem Verweij weduwe	2,0	3,0	14,0
	2	Cornelis Hendricksz van Vianen Valentijns zwager	Joosgen Willem Verweij weduwe	2,0	3,0	14,0
	3	Heer van Rennenberg en Jacob van Mijnden	Floris Hermansz	6,0	8,0	14,0
	4	Heer van Rennenberg	Dirck Joosten	6,0	9,0	12,0
	5	Jacob van Mijnden	Dirck Joosten	6,0	9,0	
	6	Dom	Dirck Joosten	4,0	4,0	
	7	Dirck Joosten	Dirck Joosten	10,0	15,0	
92	8	Vrouwenklooster	Jan Jansz	15,0	1,0	21,0
	9	St Servaas	Jan Jansz	4,0	5,0	
	10	Heer van Rennenberg	Willem Claasz	6,0	7,0	6,0
	11	Jacob van Mijnden	Willem Claasz	6,0	7,0	6,0
	12	Willem van Amerongen	Willem Claasz	2,0	2,0	31,0
	13	St Pieter	Cornelis Gijsbertsz	8,0	7,0	26,0
	14	Wouter Gerritsz moeder	Wouter Gerritsz	8,0	7,0	26,0
93	15	Heer van Rennenberg	Dirck Govertsz	4,0	4,0	32,0
	16	Jacob van Mijnden	Dirck Govertsz	4,0	4,0	13,0
	17	Willem van Amerongen	Dirck Govertsz	2,0	2,0	31,0
	18	Jerusalemconvent	Lijsbeth Rijck Gijsbertsz	4,0	4,0	32,0
	19	Lijsbeth Rijck Gijsbertsz	Lijsbeth Rijck Gijsbertsz	4,0	4,0	32,0
	20	Cornelis Valentijns zwager	Lijsbeth Rijck Gijsbertsz	4,0	6,0	38,0
	21	St Jan	Jan Jansz	8,0	13,0	
94	22	Willem de Schrijver	Jan Jansz	4,0	5,0	40,0
	23	St Jan	Oth Claasz	4,0	5,5	
	24	Gerrit Jansz	Oth Claasz	4,0	5,5	
	25	Willem van Leeuwen	Cornelis Hendricksz	7,0	9,0	22,0
	26	Willem Goortsz	Jan Willemsz	4,0	5,0	30,0
	27	St Jacobskerk pastoor	Jan Woutersz	6,0	8,0	34,0
	28	Jan Winter	Jan Woutersz	6,0	8,0	24,0
95	29	Juffr van Rijneveld	Marichje Cornelis Aartsz weduwe	4,0	7,0	16,0
	30	ten Daal en juffrouw van Driebergen	Marichje Cornelis Aartsz weduwe	8,0	8,0	34,0
	31	Juffrouw van Driebergen	Marichje Cornelis Aartsz weduwe	4,0	4,0	35,0
	32	Kartuizers	Frederik Jansz	8,0	18,0	18,0
	33	Frederik Jansz	Frederik Jansz	4,0	6,0	18,0
	34	Aalbert Beijndorp	Adriaan Claasz	4,0	8,0	4,0
	35	Jan Keijting	Adriaan Claasz	3,0	5,0	30,0
96	36	Bruijn Foeck	Adriaan Claasz	1,0	1,0	38,0
	37	Mariendaal	Cornelis Gijsbertsz	8,0	14,0	
	38	Dom	Cornelis Gijsbertsz	4,5	8,0	
	39	Neel van Cleeff	Cornelis Gijsbertsz	2,5	4,5	
	40	Mariendaal	Cornelis Gijsbertsz	2,0	3,0	14,0
	41	Heer van Rennenberg	Cornelis Willemsz	8,0	10,0	28,0
	42	Oudwijk	Cornelis Willemsz	8,0	12,0	36,0
97	43	Juffr Ruisch en Alijd haar zuster	Cornelis Willemsz	4,0	7,0	6,0
	44	Hendrick Taats	Jan Hendricksz	12,0	26,0	28,0
	45	Melaten	Jacob Hermansz	4,0	7,0	26,0
	46	Jacob Hermansz	Jacob Hermansz	10,0	16,0	8,0
	47	Heer van Rennenberg	Gerrit Willemsz	1,5	1,0	8,0
	48	St Jan	Gerrit Willemsz	4,0	7,0	
	49	Jacob Knijff en Mariendaal	Lambert Jansz	8,0	11,0	
98	50	Juffr Foeijten	Lambert Jansz	4,0	5,0	40,0
	51	Heer van Rennenberg	Hendrick Gerritsz	4,0	5,0	40,0
	52	Cornelis Ottensz	Hendrick Gerritsz	4,0	5,0	40,0
	53	St Pieter	Anthonis Gijsbertsz	10,0	14,0	12,0
	54	Willem Goertsz in de Holck?	Aart Cornelisz	4,0	6,0	28,0
	55	Oudwijk	Aalbert Joosten	14,0	18,0	
	56	Mariendaal	Aart Dircksz	18,0	32,0	
99	57	Mariendaal	Convent ten Daal	16,0	24,0	
	58	Mariendaal	Convent ten Daal	16,0	16,0	
	59	Jan Winters	Peter Huggen	6,0	7,0	6,0
	60	Jan Wouters	Jan Wouters	2,0	2,0	16,0
	60	Floris van Pallaas	Dominicus Peters	4,0	8,5	
	61	Jacob van Mijnden	Gijsbert Hendricksz	8,0	9,0	22,0
	62	Hendrick Claasz	Gijsbert Hendricksz	2,0	2,0	36,0
100	63	St Katharijne	Dirck Jacobsz	16,0	19,0	2,0
	64	Jacob van Mijnden	Dirck Jacobsz	7,0	12,0	21,0
	65	Heer van Rennenberg	Dirck Jacobsz	7,0	10,0	35,0
	66	St Katharijne	Cornelis Jansz	4,0	5,0	30,0
	67	Peter Ruijsch weduwe	Cornelis Jansz	2,0	2,0	28,0
	68	Alid Salms	Cornelis Jansz	2,0	2,0	36,0
	68	Weduwe Foeijt	Cornelis Jansz	4,0	5,0	40,0
101	69	Gerrit van Renesse	Hendrick Gerritsz	24,0	34,0	12,0
	70	Landcommandeur	Huich Gelisz Jansz	4,0	7,0	26,0
	71	Juffr van Wijck	Jan Heijmansz	4,0	3,0	28,0
	72	Jan Loeffsz	Jan Heijmansz	4,0	4,0	32,0
	73	Maarten Claasz Steenhouwer	Jan Heijmansz	2,0	1,0	38,0
	74	Kapel van Loenresloot	Gerrit Thijmansz	4,0	7,0	6,0
	75	Jan van Wede en Willem van Leeuwen	Gerrit Thijmansz	8,0	15,0	10,0
102	76	Kapel van Loenresloot	Oth Gerritsz	2,0		40,0
	77	Aalbert van Leeuwenberg	Jan Vries?	16,0	30,0	
	78	St Jan	Dirck Hendricksz	16,0	24,0	
	79	St Agnietenklooster Utrecht	Lambert Gijsbertsz	8,0	9,0	22,0

Attachment 2.

Fragment of the feudal register of the bishop, as extracted from the GIS from two layers: Parcels and Tithes into one register. The numbers in column 1 refer to the numbering as used by Maris see note 56. When numbers of feudal properties are shown twice in column 1, it indicates that the land given out as feudal property including the right to collect the tithes. For the owner that land is exempted from paying tithes he has the option to collect the tithes and rent from his tenants separately or lease out the land free of tithes.

Nr	Morgen	Judicial district	Name of Tithe
12	4	Amerongen Wiel	
13	6	Amerongen	
14	50	Amerongen	
15	20	Amerongen	
18	66	Amersfoort	Burgwal
19	264	Amersfoort	Vernheeze
21	9	Randenbroek	
24	36	Amersfoort	
26	65	Randenbroek	
26	65	Amersfoort	Randenbroek
27	9	Amersfoort	
28	20	Leusden Hamersveld	
32	538	Ter Eem of Eembrugge	Tiend ter Eem
33	152	Drakenstein	
33	10	Drakenstein	Drakenstein
34	158	Baarn	
35	28	Baarn	
37	8	Ter Eem of Eembrugge	
38	8	Ter Eem of Eembrugge	
39	102	Stoutenburg	
48	319	de Bilt Oostbroek	
48	241	De Bilt Overdevecht	Overdevecht
49	19	De Bilt Colenberg1	
49	19	De Bilt Colenberg	Colenberg1
50	5	de Bilt Overdevecht 51	
50	5	De Bilt Overdevecht 50	Overdevecht 50
51	3	Abstede	
51	3	De Bilt Overdevecht 51	Overdevecht 51
52	33	De Bilt Overdevecht	
53	6	Breukelen Otterspoorbroek	
54	16	Breukelen Otterspoorbroek	
54	33	Breukelen Otterspoorbroek	Otterspoorbroek 54
55	51	Breukelen Proosdij	
56	35	Bunnik Ter Hulle	
56	35	Bunnik Ter Hulle	ter Hulle
57	53	Bunnik ten Rijn	
57	60	Bunnik ten Rijn	ten Rijn
58	48	Bunnik Vechten Wiltenburg	Wiltendorch
59	58	Bunnik	Nije Wede
60	70	Rijnauwen	
60	37	Rijnauwen	Rijnauwen
61	22	Bunnik 61	
61	22	Bunnik 61	Gulden hoeve
62	22	Bunnik Vechten	
63	25	Bunnik Vechten	
69	61	Werkhoven	Veense veld
70	14	Darhuizen	
70	15	Darhuizen	de Clempt
71	1	Doorn	
73	33	Driebergen ter Loo	
73	45	Driebergen ter Loo	ter Loo
74	151	Driebergen Rijsenburg	
74	200	Driebergen Rijsenburg	Rijsenburg tiend

Attachment 3.

The top 50 owners as listed below, have owned 87500 of the 96000 morgen for which, to date, an owner has been identified.

Not all of this land was owned by these institutions in 1400 or that has not yet been verified. The province of Utrecht in 1832 measured 163.500 morgen or 139.200 hectares.

Owner	Category	Morgen
Bisschop	Bishop	20783
Gemeente	Common or unused land	7513
Kapittel ten Dom	Minster	5925
Gaasbeek	Nobility	4819
Oudmunster	Minster	4159
St Laurensabdij Oostbroek	Convent	3240
St Jan	Minster	2678
Vrouwenklooster de Bilt	Convent	2572
St Paulusabdij Utrecht	Convent	2484
St Stevensabdij Oudwijk	Convent	2399
Johanniters	Convent	2324
Parochies	Parishes	2266
St Marie	Minster	2244
St Pieter	Minster	2070
Duitse Orde	Convent	1827
Allodiaal	Allodial	1680
Abdij van Berne	Convent	1564
St Servaasabdij Utrecht	Convent	1297
IJsselstein	Nobility	1138
Stoutenburg	Nobility	1058
Vianen	Nobility	964
Abdij Mariendaal Zuilen	Convent	859
Amstel	Nobility	778
St Barbara en Laurensghasthuis	Hospital	644
Holland	Nobility	606
Kartuizers	Convent	587
Beverweerd	Nobility	575
Gelre	Nobility	555
Wittevrouwenklooster Utrecht	Convent	551
Maria Magdalena Wijk bij Duurstede	Convent	550
Montfoort	Nobility	495
Culemborg	Nobility	449
Egmond	Nobility	437
St Bartholomeusghasthuis	Hospital	426
OLV kapel te Amersfoort	Church	371
St Jan Baptist Wijk bij Duurstede	Minster	366
Zuilen	Nobility	351
Amerongen	Nobility	342
Armenpot Amersfoort	Relief of poor	330
Regulieren Utrecht	Convent	324
Bethlehemconvent Utrecht	Convent	318
St Pietersghasthuis Amersfoort	Hospital	297
Kapittel Amersfoort	Minster	284
Burgerweeshuis Utrecht	Orphanage	280
Buurkerk Utrecht	Church	279
St Ceciliaconvent	Convent	275
Regulieren Vredendaal	Convent	252
De Haar	Nobility	241
Begijnenhof Utrecht	Convent	233
Nijenrode	Nobility	227

