Living off the Land? An empirical investigation of land and lease distribution in central Holland, 1600-1700
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Introduction

Economic historians have long considered the agrarian economy of Holland in the seventeenth century somewhat of a miracle. While most of Europe's countryside struggled to recover from population decline, famine, plague waves, harvest failure, and general economic decline, Holland's economy and population grew to new heights (de Vries, 1976). One of the explanations for this could be that the effects of the Little Ice Age may not have had such an effect on Holland's economy, as their soils were largely infertile to begin with. Holland's food supply largely relied on grain from the Baltics, which was ported through to other parts of Europe, becoming a profitable business known by contemporaries as 'the mother of all trades' (for a detailed account on the Baltic grain trade, see: van Tielhof, 2002). While sustaining fairly steady economic growth, Holland went through several processes of 'economic modernization' (e.g., improving agricultural production, relatively advanced industry, capital markets, etc.), which led economic historians to herald Holland as 'the first modern economy' (de Vries and van der Woude, 1997), supposedly paving the way for (agrarian) capitalism.

Even though there seems to be consensus on the notion that Holland can indeed be considered the first modern economy which indeed saw an early transition to capitalism, there seems to be disagreement on how, when, or perhaps most importantly, *why* this transition took place. Roughly sketched, there are two schools of thought to distinguish in the debate on the Low Countries' transition to capitalism. The first can be described as 'Brennerian', after neo-Marxist historian Robert Brenner. Brenner argued that agrarian capitalism was enabled by what he refers to as 'social property relations', being the institutional conditions shaping ownership and access to means of subsistence and factors of production. These property relations are informed and enforced by certain 'rules of reproduction', being the rules and necessities that allowed for the continuation of family lineage and of the feudal system, that (through responses to demographic, institutional, and ecological changes) happened to pave the way for peasants' subjugation to market competition. This market-dependence was, according to Brenner, the crucial element distinguishing feudalism from capitalism. Market-dependence implied the separation of peasant producers from non-market access to their means of subsistence, forcing peasants to resort to either selling their produce on the market, or wage labour for survival. Through 'do or die' competition, peasants had to first and foremost improve labour productivity, and they could do so by specializing, It also meant that successful farmers were able to grow, which would have led to large farm plots owned by a relatively small group (Brenner, 1976; idem, 1982; idem, 2001).

The second school of thought may be called neo-Smithian and is represented first and foremost by Jan de Vries. De Vries argued that, for a long time, the free peasant class of Holland was characterized by diversification. Peasants dabbled in multiple agricultural and non-agricultural production, mostly creating goods made for self-use, and only being partly reliant on the market for their subsistence needs. De Vries refers to this as the peasant model. A juxtaposing model, the specialization model, imagines an economy in which growing demand from towns inquired a peasant supply response of increasing labour productivity.

Continuing diversified agricultural and industrious production would be insufficient for meeting urban market demands, hence peasants (and later town dwellers: van Bavel, 2009) invest in capital for increasing (non-)agricultural output. In this model, trade opportunities with growing urban trade centres formed the main incentive for peasants to focus on improving surplus value. Specialization, as such, allows for the economic autonomy of a part of the peasantry, creating employment opportunities for non-possessing peasants. The peasant model shows continuous subdivision of plots alongside population growth, whereas the specialization model shows conglomerations of plots with high concentration of ownership (de Vries, 1974: pp. 4-17).

Both schools agree that Holland's agrarian economy was eventually characterized by specialization (resulting in large plots owned by a small group of landowners), but specifics regarding *why*, *when*, or *how* this transition took place are unclear. So unclear, in fact, that one can wonder whether it is appropriate to speak of a transition at all. In order to investigate the transition on an empirical basis, this paper is concerned with the question: **how and why did land distribution change in seventeenth century Holland?** It will assess the role of landownership and leaseholds in Holland's agrarian economy by reconstructing land- and lease distributions within the borders of the Rijnland water boards. The goal is to reconstruct the region's 'social property relations' and to see how these 'rules of reproduction' were complied or undermined and why. This should provide insight into the functioning of Holland's agrarian economy in the seventeenth century, as well as wealth inequality, its causes, and concurring socioeconomic effects in Holland's countryside.

Institutional transition and landownership

As important part of the transition to capitalism is the institutional make-up and function of the region. For Brenner, institutions are even the main explanation for transition, as his work mainly opposed demographic explanations posed by the likes of Malthus, Postan, and Le Roy Ladurie. Where the latter portrayed demographic decline and local populations' inability to recover as main drivers of shifting economic behaviour, Brenner ascribed to the idea certain economic responses were only made possible through specific institutional arrangements regarding property relations. Thus, according to Brenner, demographic shifts alone could not account for transitions in the fundamental functioning of the agrarian economic system (Brenner, 1976; idem, 1982; idem, 2001). De Vries, on the other hand, while not necessarily rejecting institutional arrangements as explanation for the transition to capitalism, he sees the institutional position of the free peasant class in Holland's rural areas as an important cornerstone of the Dutch preindustrial economy, forcing investors to favour investment in rural capital benefitting the free peasant class on a household level (de Vries, 2001). In strong exaggeration for the sake of argument, it can be said that the picture sketched by De Vries is thus close to a capitalist ideal: interdependence in the limited confines of a free market allowed all parties to make a dollar off of each other, so to speak. No wonder then, that De Vries's critics in the Dutch case have described his attitude towards the evidence as overly optimistic, framing the rise of large farms as expropriation and proletarianization rather than mere specialization for fulfilling economic opportunity (van Zanden, 1988; idem, 2001; Brenner, 2001; van Bavel, 2009; idem, 2010).

The problem in understanding the transition to capitalism lies not just in the interpretation of evidence, but in the lack of evidence itself. Surely, it is known that Holland did not have a strong feudal presence in the sense that peasants were continuously robbed of their surpluses, nor did it have the institutional make-up to structurally force peasants to the edge of subsistence. The evidence, though, has to exist in the form of plot sizes and land distribution, quite simply boiling down the deceivingly uncomplicated question: who owns what? Additionally, the question ‘when?’ may become important, since the placement of the transition from feudalism to capitalism has been shrouded in mystery to the extent that it is worthwhile to wonder whether it existed as such at all. Many empirical works on the transition of feudalism to capitalism, even covering very different time periods ranging from the eleventh century to the seventeenth, has focused on the *lead-up to* the transition, much less than the transition itself (de Vries, 1974; van Bavel, 2010). This fact invites questions, not only on the timing, but also on the nature of the transition.

It is not that De Vries is necessarily wrong in his assessment of the Dutch peasantry as active and autonomous agents in the rural economy—peasants had the right to sell and lease out land, after all. But this is exactly why the question ‘*why* capitalism?’ simply doesn’t do, and simpler questions like ‘*when*’ and ‘*what*’ will. If peasants have not suffered exploitative extraction and/or expropriation, but in fact enjoyed large degrees of economic autonomy, what had changed? What has it transitioned into? What was it in the seventeenth century what it wasn’t in the previous centuries? Are we not speaking of continuity here? What then is so particularly modern about it? And how, then, do we explain a lack of social mobility and stagnation of living standards in rural areas? It boils down to the following: the capitalist system is no more than the sum of economic activity related to networks and modes of economic thought. In preindustrial Holland, these specific activities and modes of thought were characterized by *fairly equal access to markets*, whereas stronger feudalities (think England and France) were characterized by stricter market dynamics that favoured lordly and different governmental market activity over peasant market activity. In other words, perhaps it was not the economic institution at large that transitioned, but simply the institution of landownership as driver of economic activity.

For Brenner, the difference between feudal property relations and capitalist property relations lies in the peasants’ relation to the market. In a system of feudal property relations, peasants may *rely* on the market for economic gain (provided their production was effective enough to give surpluses beyond surplus extraction, which according to Brenner was hardly possible in feudal property relations because it was against peasants’ self-interest to do so), but are not *dependent* on the market for subsistence. In capitalist property relations, conversely, peasants are in fact dependent on the market for subsistence (Brenner, 2001). It should be noted, as Ellen Meiksins Wood did, that for Brenner, specialization is an index for market-dependence. This is not to say that specialization was an attempt at efficiency, nor that it necessarily had efficiency as a result (Wood, 2002: p. 56). Specialization, however, can in turn, but does not have to, be a prerequisite for increasing labour productivity. Specialization, as such, could be indicated by large plots owned by relatively few producers, which could in turn point towards market-dependence.

The contrary, though—i.e., that small plots owned by many different producers points towards diversification and independence from markets—cannot be said to be true. In all of Holland, but particularly the Rijnland area, soils can be divided in only two types: sandy clay soil and peat soil. The clay soil was the only fertile one of the two, and only relatively so—it could only grow summer grains for beer production, which left fields open or barren for cattle grazing for the rest of the year. Cattle, in turn, produced mostly cheese and dairy, which was insufficiently nutritious for subsistence, rendering the overwhelming part market commodities. Peat soils, being absolutely infertile, were used solely for mining its resource. Peat was an important fuel for heating houses, but also for certain types of proto industry, which was partly used by its producers for these purposes but was also traded to towns whose accommodations and ‘factories’ needed fuelling, too. The great disadvantage of peat mining lies in the fact of soil erosion: mining peat depletes the soil, which can be recovered through a long, labour-intensive process, which would in term render the soil completely unusable, and which peasants did not always bother doing in the first place (van Tielhof, 2016). Land in

Holland, as such, was always involved in production for markets, turning the question of the agrarian economy of Holland and its 'transition' to capitalism into a tale of market-dependence vis-à-vis land-dependence; to what extent did peasants depend on market competition for subsistence, and subsequently, to what extent did peasants rely on land for producing market commodities? In other words, what was the role of landownership in the agrarian economy of seventeenth century Holland? Did this role change over time? What concurring processes made it do so?

Thus, as introduced above, we have two general modes of thinking about the Dutch transition from feudalism to capitalism, if we decide to follow such a theoretical framework. On the one hand we have De Vries's 'capitalist ideal' of equal opportunity, fairly egalitarian power relations, and a somewhat level playing field benefitting the rural economy as a whole; on the other, we have the Brennerian dystopia of exploitation, expropriation, and proletarianization, perhaps providing short-term benefit for most parties involved, but eventually leading to structural oppression of a landless proletariat. Besides the fact that historical reality will likely point to some sort of middle ground, or to neither at all, it is at this point appropriate to raise attention to the notion that both of these views are innately shaped by assumption regarding 'the rules of the game', i.e. the institutional conditions that steer the directions of socioeconomic outcomes. The position of the peasantry in the functioning of formalized institutions, such as water boards, the provinces, cities, citizenship, etc., seems crucial for the understanding of the rise of capitalism, and has thus far mostly been coloured by ideological conceptions. Therefore, an institutional approach is the only way to approach the issue, and a difficult one at that.

It is a difficult approach indeed, since the institutional approach has (at least) two intellectual weaknesses. Firstly, it is mostly confined to a legal framework. If we define institutions as 'the rules of the game' (North, 1993: p. 3), as institutional economics tend to do, the most obvious rules to look at are those prescribed by the law. What one is formally allowed or disallowed to do makes up a large part of people's economic opportunities (by posing restraints) and consequently economic behaviour. In other words, legal frameworks steer market tendencies and thus indeed have the ability to shape outcomes. The issue with this is that the inverse is true, too—economic behaviour can strongly undermine these outcomes, which is why outcomes tend to differ across times and places. Not *because* the institutional make-up, but in spite of it. The legal framework as such mostly works restrictive in terms of economic behaviour and socioeconomic outcomes—it creates impossibilities rather than opportunities, whereas economists largely agree that economic behavioural patterns mostly require to be incentivized (for instance argued by: Wood, 2002).

In order to still justify the institutional framework, then, the definition of institutions should be taken beyond the legal framework. A solution widely implied in institutional economics is to divide 'the rules of the game' up into formal and informal institutions. Formal institutions, in this sense, are embodied by, well, institutional *bodies*, such as governments, the nation state, the stock market, the law, etc. Informal institutions reflect every mode of coexistence not represented by one of these institutional bodies. This implies communities, non-official transactions, culture, and the like. If this strikes broad and vague to the reader, they are right. Again, this is intentional, since the institutional approach has to reflect every factor influencing outcomes in order to portray a holistic view of outcomes and events. This widens the definition of 'the rules of the game' to every kind of actor, implying every action people and institutional bodies take. In this light, the institutional approach does not account to much more than the general statement that the outcomes of a certain event or process are product of the actions leading to those outcomes. Thus, the only way for the institutional approach not to be confined to the rules dictated by the specific institution of the law, is for it to include everything else, rendering the approach less suitable for meaningful analysis. In terms of landownership, this would point towards the conclusion that land was unequally distributed because it was transferred from many hands to the hands of a few.

This is not to say that an institutional approach to landownership cannot be useful. The claim here is simply that, in order for an institutional approach to be valuable, the institutional framework should be carefully designed—it should constrain itself in order to retain its relevance. This project will take an empirical approach, placing the reconstruction of land- and lease distributions in a wide theoretical framework of institutional transition and wealth inequality respectively. Whereas in the classic institutional approach, the outcome *is* the institution, the current approach respects 'the rules of the game' as actors in socioeconomic outcomes while acknowledging the facts that these rules can be undermined—the way they are complied or undermined is what determines the unfolding of historical processes. The current project attempts to do so by firstly pointing attention towards 'outcomes', i.e. land distribution and plot sizes in seventeenth century Holland.

Landownership as a form of preindustrial wealth inequality

Thus far, we have focused only on land- and lease distribution in terms of long-term institutional transition. But the reconstruction of these distribution can also contribute to a growing body of literature on preindustrial inequality. To address preindustrial inequality, it is helpful to go back Simon Kuznets' assessment of the development of income inequality in the United States. Kuznets argued that inequality had begun to rise with industrialization, after which its fruits (i.e., economic growth) were distributed more equally across income groups in the shape of an inverted U-curve (Kuznets, 1955). Implicitly, Kuznets said that inequality only started rising with industrialization. More apt is to say Kuznets' contribution raised questions on the state and development of inequality pre-industrialization. This issue was firstly investigated by Jan Luiten van Zanden on the case of the Low Countries, who proposed the concept of a 'super-Kuznets curve'. Van Zanden does not reject Kuznets' idea that inequality had been rising during periods of industrialization, yet he does argue that inequality had been on the rise throughout the entire early modern period, saying that industrialization did not necessarily instigate inequality, but did not stop inequality from rising until industrialization was well-settled (van Zanden, 1995; Soltow and van Zanden, 1998).

After Van Zanden's account, economic historians showed relatively little interest in (preindustrial) inequality, that is until Thomas Piketty put inequality back on policy and research agendas with *Capital in the 21st Century* (2014). He did so by asking the reverse of Van Zanden's question—where Van Zanden focused on the lead-up to developments of industrial inequality, Piketty asked about its tail. He found that inequality had been rising steadily since its initial decline from roughly the 1930s until the 1970s. Additionally, Piketty addressed the importance of wealth inequality vis-à-vis income inequality. Wealth inequality seems to be the more structural of the two, concentrating wealth through the principle of infinite accumulation, and defying trickle drown effects (Piketty, 2014). Since then, research on preindustrial inequality has become more common, too.

Academics propose that economic inequality has run a somewhat linear 'course' depending on several societal factors, such as levels of industrialisation and dispersion of technology, economic growth, surplus extraction, etc., only interrupted by catastrophic shocks to capital, such as earthquake or war, and labour, such as epidemics (Alfani & Ammanati, 2017; Alfani, et al., 2020; Scheidel, 2017). Inequality as presented in this sense, as real as it in actuality is, reflects mostly a certain academic understanding of an economic system through the examination of sources that, obviously, do not directly reflect inequality, but only segments thereof. This is of course easily excused through lack of proper source material, but it does raise questions on what we actually mean by inequality when we speak of it in a historically, and what are the underlying assumptions?

The most striking of these is that inequality is often presented as a force of its own, whose natural state is to rise if uninterrupted (Scheffer et al., 2017; Scheidel, 2017; even Piketty, 2014). This idea, in fact seems to be supported by research on long-term preindustrial inequality for different localities throughout Europe (van Zanden, 1995; van Zanden & Soltow, 1998; Alfani & Ammanati, 2017; Ryckbosch, 2016; Alfani & Di Tullio, 2019; Alfani, et al., 2020). The idea that inequality rises naturally if uninhibited is not found in ever-increasing Gini's—although there are, admittedly, for the preindustrial period only few cases where of research which see Gini's declining over time (e.g., Portugal: Reis, 2017)—but also in larger societal and natural processes. That is to say that inequality does not rise due to structural institutional incentives for the wealthy to accumulate—or otherwise, to restrict the poor from entering certain markets—but will rise due to natural flows of dominance in turn determining the 'rules of the game' (Scheffer, et al., 2017). In fact, the article argues that, theoretically, if a lottery were to be played infinitely among 100 persons, all prizes within that lottery would eventually end up with one person. In nature, as Scheffer argues, this mechanism is prohibited by something biologists understand as the 'kill-the-winner' principle, in which certain pathogen will attempt to overthrow the 'ruling' species' dominance. Society, the argument continues, does not have such a natural principle and will thus only shape its inequality by institutional arrangements.

Particularly when leaseholdings become the norm in some areas, landownership can become a lucrative business; an investment that yields returns. In a model of specialization, where large plots of land are owned by a select group of owners, owners would become reliant on rent for at least part of their income. Tenants, in the meantime, have to improve labour productivity on rented land for optimizing the cost-price ratio of their products. This implies that market-dependence is not equal across the peasantry, nor is the form this market-dependence takes. Inequality of land distribution thus shapes and complicates peasants' economic behaviour and social positions. How does this type of ownership relation affect the economic opportunities of the owner and the tenant? In other words: how does preindustrial wealth inequality shape economic behaviour of peasant households? What kind of trends does it instigate and what kind of processes influence inequality trends?

Primary source material

In order to assess the role of land in Holland's rural economy, this project will reconstruct the distribution of landownership and leaseholds over the seventeenth century for several localities (by contemporaries referred to as *ambachten*), in the Rijnland area of Holland, roughly located between Gouda and Amsterdam, centred around Leiden. The reconstruction of land dispersion is largely possible for this area and this timeframe, due to a rich type of source known as *morgenboeken* (henceforth: land registers). These are administrative sources documenting landownership in surface area from about halfway through the sixteenth century, sometimes running as long as halfway the nineteenth century, when cadastral registration had made documentation of this type obsolete. The books were initiated by the water board, who took the responsibility of protecting the land against floods and other water-related business. The water board levied taxes for their expenses, reportedly never more than that, and based on the amount of land one owned (Amstel-Horák, 2001). This was registered on a yearly basis and fairly neatly and systematically summarized every leap year. These summaries were made available online a couple of years ago. Land registers were common modes of registration for the water boards of Rijnland and Delfland, surrounding The Hague and Delft, but were only maintained for Rijnland and its rich possibilities are thus unique to this specific area (de Wilt, 2015: pp. 39-41).

The sources are not necessarily new to economic historians of early modern Holland, yet they have hardly been used for the reconstruction of landownership. Already in the 1930s famous economic historian Nico Posthumus, founder of the International Institute of Social History, saw potential of the sources and sent a handful of his master students to reconstruct land and lease distribution for at least the first year of registration for all localities. The work, however, proved too cumbersome for manual investigation and the students, starting from A, left it at the letter B, causing many students to conclude on a disappointed note for lack of structural evidence. They did, however, all find shrinking plots and a larger number of owners over time (as shown by Van Tielhof, 2016: pp. 113-116). Law scholar Fockema Andreae also attempted a reconstruction of landownership and lease relations for 1544 Wassenaar, concluding that, generally, farmers tended to own their houses and a small plot of land attached to that house, while leasing out larger plots that should form the remainder of that parcel (Fockema Andreae, 1964). Amstel-Horák has been responsible for the most comprehensible source commentary yet for the source material (Amstel-Horák, 1994; idem, 2001). Another notable use of the land registers comes from early modern historian Henk van Nierop, who, among other things, investigated nobility landownership in Holland (van Nierop, 1984: pp. 109-119). The most recent exploration of the sources is attributed to Milja van Tielhof, who has used Posthumus' students' theses, among other sources, to show that aggressive peat mining led to proletarianization (Van Tielhof, 2016). Yet, for the most part these sources have served as inspiration for genealogical research, hence the online availability of transcribed land registers for certain localities.

The land registers have thus far only been put to limited use, despite large consensus on their completeness and usefulness. Admittedly, it is a near impossible task to process every land register available, even just for the seventeenth century, and one could also wonder what that would add to the research beyond more of the same evidence. It is therefore necessary and, in fact, profitable to make a selection of case studies. These are obviously not picked at random—although that methodology would, in a way, be justifiable—but have been subject to thorough inspection before deciding. I have spent some time scourging through every land register available in order to extract the type of information available (do they distinguish between owners and users, do they mention the residence of the owners and users, do they mention the date the transaction was signed, etc.) and to discern a type of documenting tradition and to see whether this tradition changes over time.

It seems that different *landmeters* work in different traditions and these traditions often seem telling of the initial situation of land distribution. Land registers tend to grow more systematic over the course of the eighteenth century and beyond, often ordering by parcel, clearly stating their owner first and their user after. This may very well have to do with general improvement of administration—the handwriting gets considerably easier to read, as well—but the uniformity in denotation also alludes to a standard situation which was most viable for registration. The standard suggests that leasing had most definitely become the norm by the eighteenth century, but this cannot be said for the seventeenth century. The question to be answered is when this process of increasing leaseholds was initiated, how it developed, and what social and economic processes it coincided with.

Hypotheses

The preliminary assessment of the land registers, with help of the literature, invites a number of hypotheses regarding trends in land- and lease distribution. Firstly, I expect to find that *subdivision of plots will make place for consolidation of plots in the long run.* That is to say plots will increase in size while the total amount of plots will decrease. Particularly in the area surrounding Leiden, land reclamation was rather sparse in comparison to the north of Holland, leaving total land size largely constant. The specialization model dictates, however, that peasants had to create large farms for optimizing cost-price ratios, so the available plots are expected to be divided and conjoined in various forms, multiple times across the seventeenth century.

Secondly, I expect to find *dynamic land markets with strong local heterogeneity*. Land is transferred often, particularly around years that see mortality spikes. In such cases, land is often first transferred to the heirs or widow, after which the plot is transferred to one of the children or sold to another party. It is useful to note that plague waves tended to occur approximately every twelve years, so this kind of pattern is not uncommon. Furthermore, we see some plots being held by the same person for decades, whereas other plots change owner much more frequently. Transferring land can serve a number of purposes, such as providing a child financial stability for starting a family after marriage, or simply as a means of making money quickly. I suspect that the dynamism of these markets will be differing per locality, based on individual households' economic needs.

Thirdly, I expect *burgher ownership to grow over time*. Burgher ownership is simply land owned by town dwellers, usually urban investors aiming to collect rent. Bas van Bavel claimed that throughout the sixteenth, but particularly the seventeenth century, land increasingly ended up in the hands of town dwellers, expropriating and proletarianizing the majority of the peasantry (van Bavel, 2009). Even though Van Bavel presents no numbers of burgher ownership past the 1620s, there is little reason to believe land will end up back in peasants' hands. Especially considering the role of land- and leaseholdings in Holland's general rural economy, it is a hypothesis that should be tested.

Fourthly, I expect *burgher ownership ratios, exemplified by leasehold to ownership ratios, to be correlated with soil types and the ambacht's proximity to towns*. Near the end of the nineteenth century, E.F. van Dissel calculated the percentage of leased land in relation to the number of owners using their own land for a number of localities in the Rijnland area mid-sixteenth century, finding strong regional diversity (van Dissel, 1897). Piet van Cruyningen distinguished these numbers by type of soil—peat soils and the more fertile sand/clay soils (see Table 1)—and found that sandy clay soils were generally leased in higher numbers than peat lands (van Cruyningen, 2020: p. 4). This would point towards two things: firstly, that peat soils were mostly worked for own use, be it simply warmth or proto-industrial activity; and, secondly, that sandy clay soils, in addition to subsistence use, where seen as a form of wealth or capital that could yield returns. Van Bavel noted that town dwellers mostly bought up newly reclaimed land (van Bavel, 2009), of which there is very little in the southern Rijnland area under investigation in this project. Still, as land becomes a way of stabilizing income for investors, it can be expected that land, in particular that close to cities, will see increased burgher ownership.

Table 1. Leasehold in the *ambachten* of Rijnland, grouped according to soil type, 1540-44

Clay/sand	**Area in *morgen***	**% leasehold**	**Peat**	**Area in *morgen***	**% leasehold**
Alphen	2294	64.2	Aalsmeer	4464	7.2
Hillegom	996	48.4	Ter Aar	2253	12.3
Katwijk en Valkenburg	1005	73.7	Aarlanderveen	2512	42.8
Koudekerk	1168	69.5	Alkemade	3138	23.1
Lisse	1552	56.4	Boskoop c.a.	684	22.2

Noordwijk c.a.	3706	67.8	Burggraverveen	284	0.8
Oegstgeest	1977	71.4	Esselickerwoude	2527	31.0
Rijnsburg	295	70.3	Haarlemmerliede c.a.	1237	65.4
Sassenheim	954	61.7	Hazerswoude	4010	22.9
Voorhout	1417	61.8	Leimuiden	1128	8.0
Warmond	1329	67.3	Nieuwerkerk	632	36.1
Wassenaar	2047	58.0	Oudshoorn	1669	48.5
Zoeterwoude	5994	39.5	Reeuwijk c.a.	2615	27.7
Zuidwijk	1529	52.0	Rijnsaterwoude	607	10.5
			Schoot	524	0
			Sloten c.a.	4356	40.5
			Spaarnwoude c.a.	1410	26.2
			Vriesekoop	1183	3.5
			Waddinxveen c.a.	1186	6.5
			Zegwaart	1622	1.1
Total	**26,263**	**58.0**	**Total**	**38,041**	**24.3**

Source: van Dissel, 'Grond in eigendom', 153-4; van Cruyningen, 4.

Tying into the idea of land as a form of wealth, I additionally expect *the number of leaseholds in relation to land used by the owner to rise over time*. From a quick, preliminary assessment through each available land register, it is striking to see the amount of plots with indicated usership (as opposed to owners using the land, in which case usership is often not indicated at all) become the norm for almost every locality near the end of the seventeenth century. As mentions, this points towards the development of land being used for subsistence (regardless of market-dependence), to land being used as a form of wealth from which to gain returns, as in Adam Smith's classical description of one of the three main sources of income. These processes will most likely differ locally, but a general trend of increasing leases is expected to be found.

Finally, I expect *inequality of land distribution to be relatively low, yet slowly rising over time*. As mentioned above, for seventeenth century Europe, the norm seems to be that wealth inequality rises over time, albeit slowly (also shown to be the case for the Low Countries, but for rent prices: Soltow and van Zanden, 1998). The rise in inequality might be explained through the specialization model: plots consolidate and end up in the hands of 'big farmers' who largely produce for the market, optimizing cost-price ratios. Additionally, the use of land as capital could tempt investors to buy and consolidate plots, which would drive Gini coefficients up.

An example of preliminary results

In order to illustrate what kind of information the current project attempts to distil from the sources, I have provided some numbers below, along with some potential implications. The following numbers are a part of the results for one single *morgenboek* from Hazerswoude (located just south-east of Leiden) in 1604 (OAR, 4331e).

Table 2. Amount of roeden owned (as opposed to total plot size) per individual plot, Hazerswoude 1604

Amount of roeden owned[1]	Number of plots (total: 1483)
0-700	483
700-3500	868
3500-7000	106
>7000	26

Mean plot size: 3822 roeden (5,41 ha)
Mean owned surface area: 1542 (2,18 ha)

Source: OAR, 4331e.

As seen in Table 2, the overwhelming part of owned plots (concentration of ownership not taken into account) can be found in the lower regions of plot sizes. If ownership of large plots is indicative of specialization, it can be said that this process was not yet in place for Hazerswoude in 1604. In fact, we might speak of a form of diversification—subdividing plots among children, using land as only a part of subsistence activity—judging from the large number of owned plots in the smallest category. Additional evidence towards this theory is the fact that the mean plot size (3822 roeden), based on the initial plots of the first available register for the locality, is more than twice as large than the amount of surface area owned per plot (1542 roeden). This implies that initial plots have been subdivided, but it also points towards a form of cooperation through joint ownership of a single plot.

Percentage of leaseholds: 3,4%

The percentage of leaseholds in Hazerswoude in 1604 was only 3,4%, compared to 22,9% in the 1540s (see Table 1). This implies that land was not linearly or equally attractive over time for tenants or investors. Though leaseholds are expected to become generally more common over time, they might remain spatially and temporally specific. Importance of landownership vis-à-vis leaseholds can thus differ dependent on certain concurring economic processes, which are to be investigated.

Percentage of non-residential ownership: 10,1%
Percentage of urban ownership: 2,1%

In 1604, about a tenth of plots (10,1%) were owned by individuals living outside the borders of Hazerswoude. Only 2,1% of the total amount of plots were owned by town dwellers. This would counter Van Bavel's point that burgher landownership increased from halfway through the sixteenth century and would only increase throughout the seventeenth century (van Bavel, 2009). Although burgher ownership can still be expected to grow in this region, in 1604 the percentage of burgher landownership was still very low, additionally pointing towards low demand for landownership from investors.

[1] N.B.: 700 roeden = approx. 1 hectare.

Percentage of female ownership: 7,0%

Ca. 7,0% of plots were owned by women in Hazerswoude in 1604. The overwhelming amount of these were widows, often indicated by name of their late husbands. It must be noted that 1601-1604 marked strong presence of plague in nearby Leiden. It could be the case that Hazerswoude was hit by plague as well, implying that 7,0% female ownership can be considered rather high and that it is likely to decrease in subsequent years.

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