The Great Famine in the county of Flanders (1315-17): the complex interaction between weather, warfare, and property rights

# The Great Famine in the county of Flanders (1315-17): the complex interaction between weather, warfare and property rights[+]

BY SAM GEENS[*]

Heavy rains and harsh winters plagued North-western Europe in 1315-17, causing three consecutive harvest failures. As grain prices soared to unprecedented levels, real wages fell to an all-time low. The extreme dearth and hunger resulted in an overall population loss of approximately 10 to 15 per cent.[1] Struck by the magnitude of deaths, chronicler Lodewijk Van Velthem stated in 1315 that there was no more room in the Brabant graveyards.[2] Unsurprisingly, some historians regard the Great Famine as 'the single worst subsistence crisis ( ... ) in recorded European history.'[3] Yet, despite its importance, our knowledge of the causes and impact of the famine is still limited.

Not only has the Great Famine received relatively little scholarly attention, the historiography also suffers from two important shortcomings. First and foremost, the general discussion on medieval famines has focused on the larger context of the late medieval agricultural crisis. As a result, these events have mainly been viewed through Neo-Marxist and, since the 1990's predominantly, Neo-Malthusian models.[4] In contrast, historians, like François Menant and Phillipp Schofield, have stressed the need to treat medieval famines as subsistence crises to be studied in their own right. By extension, they have advocated the benefits of applying recent

[+] I would like to thank my two mentors, Prof. Tim Soens and Prof. Peter Stabel, for their valuable aid. I also want to thank the anonymous reviewers for their suggestions, and Philip Slavin for giving me early access to his article as well as providing expert feedback.
[*] Funded by a PhD Fellowship of the Research Foundation – Flanders at the University of Antwerp
[1] Jordan, *The Great Famine*, pp. 7-23.
[2] De Keyser and Van Loey, *Spiegel historiael*, p. 220.
[3] Campbell, 'Nature as historical protagonist', p. 287.
[4] Franklin-Lyons, 'Modern Famine Theory', p. 33. In the last decade, environmental models have become increasingly popular. However, they can be regarded as an elaboration of the Neo-Malthusian approach as most of these models still see the equilibrium between population and production as the essential link between harvest failure and famine. See for example Zhang et al., 'The causality analysis'.

theories on modern subsistence crises to the medieval world.[5] Empirical studies on medieval famines are, however, still rare and only a minority employs famine theories. For the Great Famine, the 2014 article of Philip Slavin is one of the few exceptions.[6]

Secondly, the vast majority of literature dealing directly with the Great Famine pertains to England. While information on prices, yields, and wages are abundantly available for the latter region, such records are scarce for Continental Europe.[7] The use of alternative sources, such as chronicles, registrations of inheritance taxes, lists of fines, archeology or dendrochronology, has allowed scholars to estimate the magnitude of the dearth, but has offered few opportunities to explain the famine.[8]

The aim of this article is to address both issues by giving a multi-causal explanation, in line with modern famine theories, for the crisis of 1315-17 in the county of Flanders. After highlighting some essential concepts of famine theories in connection to the historiography of the Great Famine (I), we shall elaborate the used methodology and sources (II). The next sections will reassess the role of traditionally offered explanations (III) and analyse a new structural factor, namely the influence of property rights (IV and V).

## I.

As mentioned in the introduction, Neo-Malthusian models have influenced the interpretation of medieval famines and the notion of vulnerability. By focusing on the relationship between population and food supply, historians have - often implicitly - followed the explanatory

[5] See for example: Bourin and Menant, 'Les disettes dans la conjoncture de 1300'; Schofield, P., 'Approaches to Famine'; i Monclús, 'De Labrousse a Sen'.

[6] Slavin, 'Market failure'. Other historians have published empirical studies on the Great Famine, but did not link their results with famine theories. See for example Davies and Kissock, 'The feet of fines'.

[7] Abel, *Agricultural fluctuations*, p. 18. For example, Sivéry's average grain prices for France in 1315-17 are based on 8 records of sales. Sivéry, *L'économie du Royaume*, pp. 69-86

[8] See for example Lucas, 'The Great European Famine' Postan and Titow, 'Heriots and prices', p. 407; Derville, *l'Agriculture du Nord*, pp. 83-85; Campbell, 'Nature as historical protagonist', p. 292.

framework of food availability decline theories (hereafter FAD). Such theories regard famines as a sudden failure of food production caused by an external shock, such as flooding or drought. The term 'vulnerability' can be defined in its most abstract meaning as 'being prone to or susceptible to damage or injury.'[9] Naturally, the central question of which factors make which people more vulnerable to famine has resulted in a wide variety of interpretations of the term.[10] Within FAD, vulnerability is seen as the risk of food shortages. It is connected to environment, agricultural productivity, and demography – factors which are traditionally analyzed on a national scale.[11] Geographical differences within one country are rarely explored.

In line with the theoretical framework of FAD, the historiography of the Great Famine has focused on two shocks. Primarily, scholars attribute the crisis to the effect of extreme weather conditions on harvests. Between the autumn of 1314 and the spring of 1317, rains rarely ceased and soils became saturated. In addition, the winters were extremely cold. Bruce Campbell has calculated that grain yields in England were respectively 39, 63 and 10 per cent below average during the three years of the Great Famine.[12] Consequently, wheat prices trebled and oat prices quintupled within one agricultural year.[13] As mentioned earlier, similar data for Continental Europe are hardly available. Nevertheless, alternative sources seem to indicate that, here as well, harvests were catastrophic. In Northern France, the wheat price trebled between 1315 and 1316.[14] In Flanders, Gelderland, and the Rhine region, contemporary chroniclers reported similar increases.[15]

Secondly, scholars have explored the role of warfare. In the early fourteenth century, war was omnipresent in Europe. The British Isles witnessed conflicts in the Lordship of Ireland, the

[9] Wisner, *At risk*, p. 11
[10] Ibid., pp. 11-15.
[11] Baro and Deubel, 'Persistent Hunger', p. 523.
[12] The average is indexed on the years 1211-1491. Campbell, 'Three centuries of English crop yields'.
[13] Slavin, 'Market failure', pp. 10-13.
[14] Derville, *L'agriculture du Nord*, p. 82.
[15] Jordan, *The Great Famine*, p. 51.

Welsh Marches, and near the border of Scotland and England. On the continent, dynastic struggles afflicted the Holy Roman Empire and the kingdoms of Scandinavia, while the French king fought to reinstitute his suzerainty over the county of Flanders. All these wars supposedly intensified the crisis through the destruction of property and the augmentation of taxes.[16] However, up to now the precise link between the dearth of 1315-17 and warfare has received little scholarly attention because warzones were fairly limited in terms of geography.[17]

Within the broad research field of famine studies, FAD has not been accepted without criticism. Already in 1976, Amartya Sen argued that famines are not caused by a decline in the availability of food, but by a decline in the entitlement to food.[18] Simply put, a person's entitlement is determined by the legal possibilities to convert his or her resources into food (i.e. through labor, inheritance, production or trade).[19] This theory was revolutionary because it marked the shift in explaining famines from external shocks towards structural factors, such as market functioning or political power. It is important to note that Sen's entitlement approach does not reject FAD theories.[20] Harvest failure can result in starvation. However, based on entitlements, not all groups are affected equally. In this regard, vulnerability has two aspects: 'an external side of risks, shocks, and stress to which an individual or household is subject; and an internal side which is defenselessness, meaning a lack of means to cope without damaging loss.'[21] Subsequently, the analysis of vulnerability became a multidimensional approach. The term does no longer solely cover environmental factors, but also social inequalities, institutions, and conflicts over access to resources.[22] Moreover, these factors ought to be examined at all levels

[16] Ibid., pp. 19-20; Slavin, 'Warfare and Ecological Destruction'.
[17] Ibid., p. 543.
[18] Sen, 'Famines as Failures'.
[19] Sen, *Poverty and famines*, pp. 1-8.
[20] It incorporates food shortages as a 'failure in the production-based entitlement'. Devereux, 'Sen's entitlement approach', p. 248.
[21] Chambers, 'Vulnerability, Coping and Policy', p. 33.
[22] Baro and Deubel, 'Persistent Hunger', pp. 526-528.

of society – from the individual to the international. Today, geographical differences are a key feature of famine studies. [23]

Given the scarcity of sources and the nature of the past debate, it is hardly surprising that the entitlement approach has largely been ignored in the historiography of the Great Famine. Only recently has Philip Slavin argued that market failure aggravated the crisis of 1315-17 in England. He showed that, following the harvest failures, market supervision declined, preferential trade increased, and hoarding became more common. In this context, social status dictated one's vulnerability: grain prices were not set by the market, but rather depended on personal networks and the reputation of buyer and seller.[24] Again, this does not mean that we should ignore the importance of harvest failures. As Slavin argues, the impact of the Great Famine is not a question of FAD or entitlement decline, but rather a story of mutually influencing factors.[25]

## II.

Slavin's study was the first to empirically analyse the role of entitlements during the crisis of 1315-17. As such, we have only begun to explore the 'internal side' of vulnerability to the Great Famine and many questions remain open. Why were certain groups or regions affected more than others? A multitude of anthropogenic factors, such as poor relief, labour markets or credit markets, may have influenced vulnerability. However, within the limited space of this article, we will focus on the interaction between climate, warfare and property rights. Since land constituted one of the most important sources of production and wealth during the Middle

[23] Ibid., pp. 524-529; Vanhaute, 'From famine to food crisis', pp. 50-51. For a regional approach to famines in history see: Crowley, Smyth and Murphy, eds., *Atlas of the Great Irish Famine*; Devine, *The Great Highland Famine*.
[24] Slavin, 'Market failure'.
[25] Ibid., p. 11.

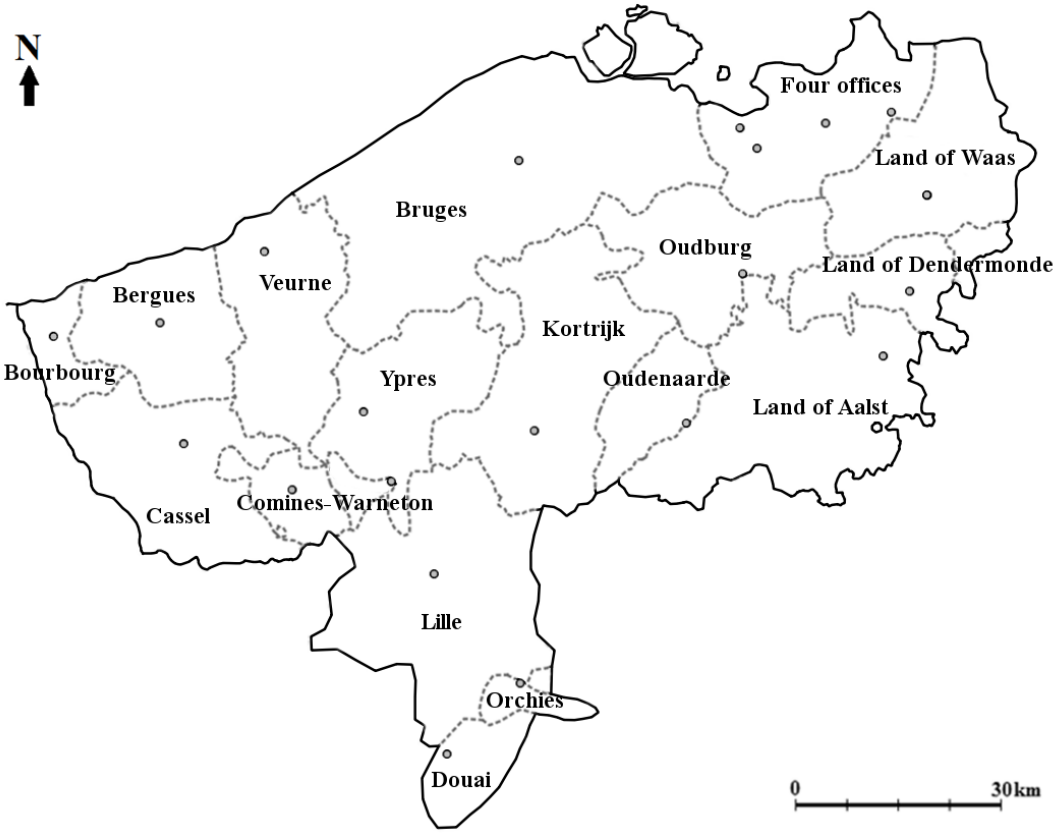
Ages, historians have speculated about the importance of property rights to mitigate the consequences of the Great Famine.[26] For example, the amount of land owned, the obligations connected to that plot, or the form of payment for its usage may have affected vulnerability in different ways.[27] In the next sections we will, for the first time, put these hypotheses to the test. Central to our approach are two sets of sources, each of which has a different purpose. Firstly, records of arrears, connected to land rent owed to the count of Flanders, are used as a proxy for vulnerability. When households are faced with famine, they will use different coping strategies in a certain sequence. In a first stage, they will take measures that are easily reversible, such as changing diet or borrowing from kin. Next, households will turn to strategies that have an impact on their future social and economic status. For example, they resort to crime or sell off key productive assets, like cattle, tools or land. The last and extreme stage entails permanent migration.[28] In this context, arrears can be seen as a reflection of the second stage because failure to pay debts can lead to expropriation of key assets. Secondly, records of arrears are complemented with a confiscation list to analyse property rights. By calculating the correlation between the regional differences within each set of sources, we can identify new causalities: are certain characteristics of property rights connected to a higher degree of vulnerability?

The county of Flanders forms an excellent test case. Exemplary for Continental Europe, we have few studies on the Great Famine. In fact, in 1959, Hans Van Werveke published the only article dealing directly with this issue.[29] Furthermore, the county is characterized by a great variety of property structures within a geographically limited area (see section IV), which makes it ideal for examining the influence of property rights. Thanks to a confiscation list from

[26] Van Bavel, 'People and land', p. 15;
[27] Franklin-Lyons, 'Modern Famine Theory', p. 36-38; Curtis et al., 'Famines in the Low Countries'.
[28] Corbett, 'Famine and Household, pp. 1103-1109; Baro and Deubel, 'Persistent Hunger', pp. 528-529; Kirkland et al.,'Toward improved understanding'. For the increase in crime rates during the Great Famine see: Hanawalt, *Crime and conflict*.
[29] Van Werveke, 'La famine de l'an 1316'.

1315-16, we are able to map landholding during the famine.[30] This document was drawn up amidst the French-Flemish war of 1314-16. In order to eliminate political adversaries within Flanders, count Robert of Béthune ordered the confiscation of goods belonging to Flemish supporters of the French king, called Lilies. Functionaries traveled from July 1315 until Easter 1316 throughout the county to inventory all goods. For every castellany (i.e. an administrative-jurisdictional division), collectors noted down potential and executed confiscations. They closed off their reports with a third section, which detailed all the expenses made during the surveys. Covering 98 folia, these three sections contain information on landowners, holding sizes, leases, etc.

*Map 1. The castellanies of the county of Flanders at the start of the fourteenth century*

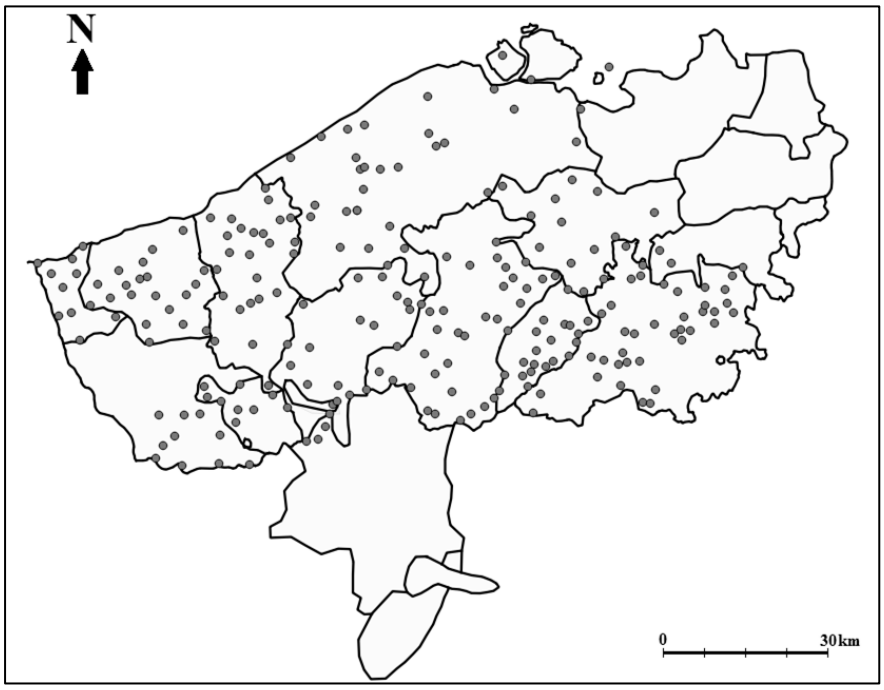



Source map: Thoen, Soens, and Beeckman, *GIS-kaart van het graafschap Vlaanderen* (Ghent, unpublished).

[30] Lille, Archives Départementales du Nord (hereafter ADN), Série B, no. 6949.

Although the confiscation list enables us to assess regional property rights, we should be aware of the limitations and problems inherent in the source. First, the expropriations only concentrated on movable and immovable goods in the countryside. The source is therefore useful for researching rural property, but less for urban property. This is an important limitation for the county of Flanders, which was one of the most urbanized areas in late medieval Europe. Secondly, the confiscation list does not provide information on landholdings for every castellany. Expropriations were impossible in Douai, Orchies, and the northern part of Cassel, because the French king occupied those regions. For the three easternmost castellanies - Four Offices, Land of Waas, and Land of Dendermonde - we also lack data, either because the accounts have not survived or because nothing was confiscated. For the other twelve castellanies, the confiscation list provides information on 946 rural properties and 353 owners. The geographic distribution of the reports shows that the data are spread relatively evenly within and between regions (see map 2).

Map *2. Geographic distribution of reported landholdings in the confiscation list of 1315-16*




Source data: Rijsel, ADN, Série B, no. 6949.
Source map: Thoen, Soens, and Beeckman, *GIS-kaart van het graafschap Vlaanderen* (Ghent, unpublished).

A third problem concerns the representativeness of the source. As the confiscation list is limited to landholdings of the Lilies, the picture is possibly distorted. To what extent was political preference connected to a certain profile of landownership? In order to answer this question, we will profile the different owners and their property. Whenever possible, we compare the typology with secondary sources for later periods. This allows us to assess whether and for which social groups our data are representative. The final point of concern does not stem from the source itself, but from the medieval context in which it came about. The modern view on property rights corresponds with the absolute and exclusive right of a person over a certain good. However, medieval property rights were more complex. Different people and collectives could claim the same piece of land at the same time.[31] In this regard, we should interpret landholding rights more broadly as 'the bundle of rights to land, such as the right of access, the right of sale and the right of inheritance, but also the right of use and the rights of profit, the rights of exclusion, the rights of management, and even the rights of prestige.'[32] In this definition, landholding is not only an economical factor but also a social-political one.[33]

For the records of arrears, we use the general financial accounts of the count, called the *renenghelles*. From the eleventh century onwards, the counts used regional bureaus to collect their incomes from land rents. The territory covered by these offices corresponds closely to castellany borders and is thus compatible with the data from the confiscation list. The bureaus were organized according to the kind of income: *spicaria* were responsible for the collection of grain, *vaccaria* for dairy products, *lardaria* for animal products, and *brevia* for money revenue. Every July, the bureaus had to present their accounts to a specialized body called the *Redeninge*. In the fourteenth century, the results of these yearly meetings were written down in the

[31] Van Bavel and Hoppenbrouwers, 'Landholding and land transfer', pp. 14-16.
[32] Van Bavel and Thoen, 'Rural History', p. 25.
[33] Vermeylen and Van der Horst, 'Beyond Monetary Valuation', pp. 176-178; Van Bavel, *Manors and markets*, pp. 51-123.

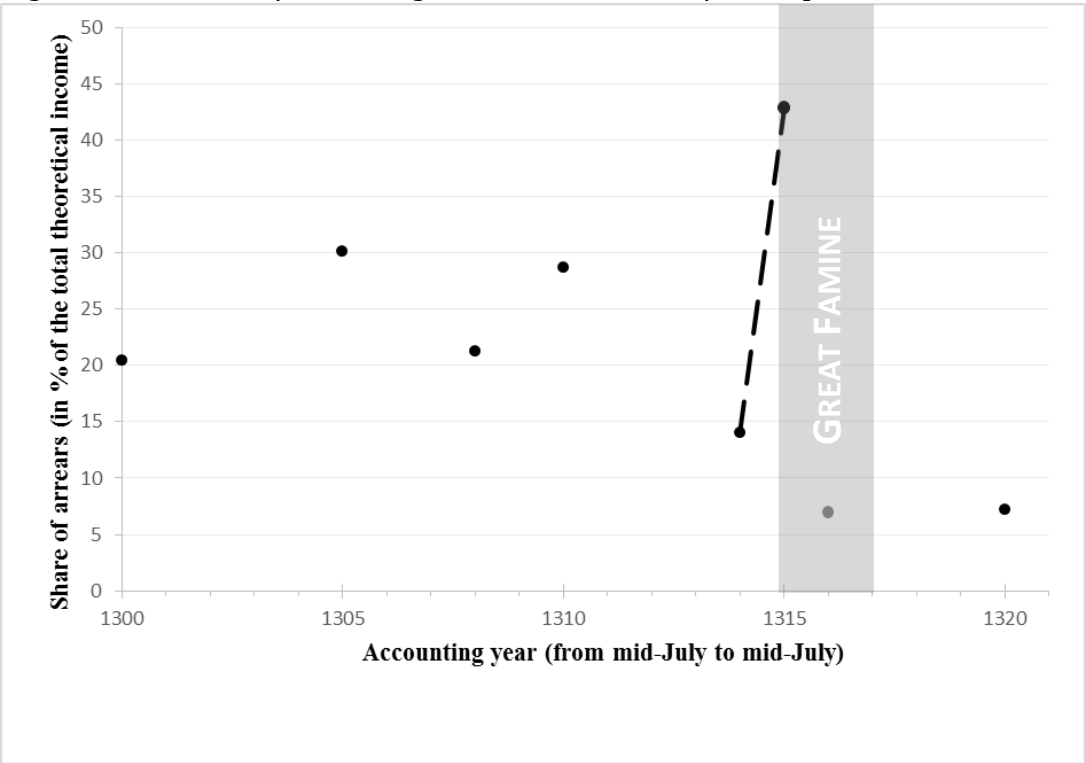
aforementioned *renenghelles*.[34] They are preserved for the years 1295-6, 1300-1, 1305-6, 1308-9, 1310-11, 1314-15, 1315-16, 1316-17 (only for the castellany of Bruges), 1320-21, and 1350-51.

In order to quantify the impact of the Great Famine, we focus on the accounts of the *spicaria* because they are connected to the regional harvest. The functionaries wrote down a theoretical total income in money for each bureau. For some offices, they also gave the amount of income that was not collected. These sums were calculated by multiplying the expected income in kind and the effective arrears, respectively, by the estimated value of the products in the calculation year. Since we do not know the unit of estimation used, we express the debts as a percentage of the theoretical total income. This method provides us with a unit of comparison, namely the share of arrears, and allows us to compare the accounts of different years and castellanies. However, the interpretation of this unit is not unambiguous. On the one hand, a rise in the share of arrears may indicate an increased inability to pay. If so, the unit of comparison can, as we have explained above, be used as a proxy for regional vulnerability. On the other hand, we can attribute the same rise to a reluctance to pay, the incompetence of the count‘s officials in collecting revenue, or their unwillingness to do so. Here, a correlation with vulnerability is doubtful. In fact, the exact opposite is plausible: castellanies that were less susceptible to the collections of the count may also have been less vulnerable to famine. Thus, in order to interpret the data of the *renenghelles* correctly, we must first identify the circumstances under which the share of arrears is representative for the vulnerability of a region. An exploration of the political, economic, and administrative context is needed.

Broadly speaking, we can distinguish between two phases in the evolution of the arrears (see figure 1). The first one encompasses the period between the first observation and 1305. The increase in arrears is inextricably linked with the first part of the French-Flemish war (1297-

[34] Soens, *De rentmeesters van de graaf*, pp. 43-45.

*Figure 1. Evolution of the average increase in arrears for all spicaria.*



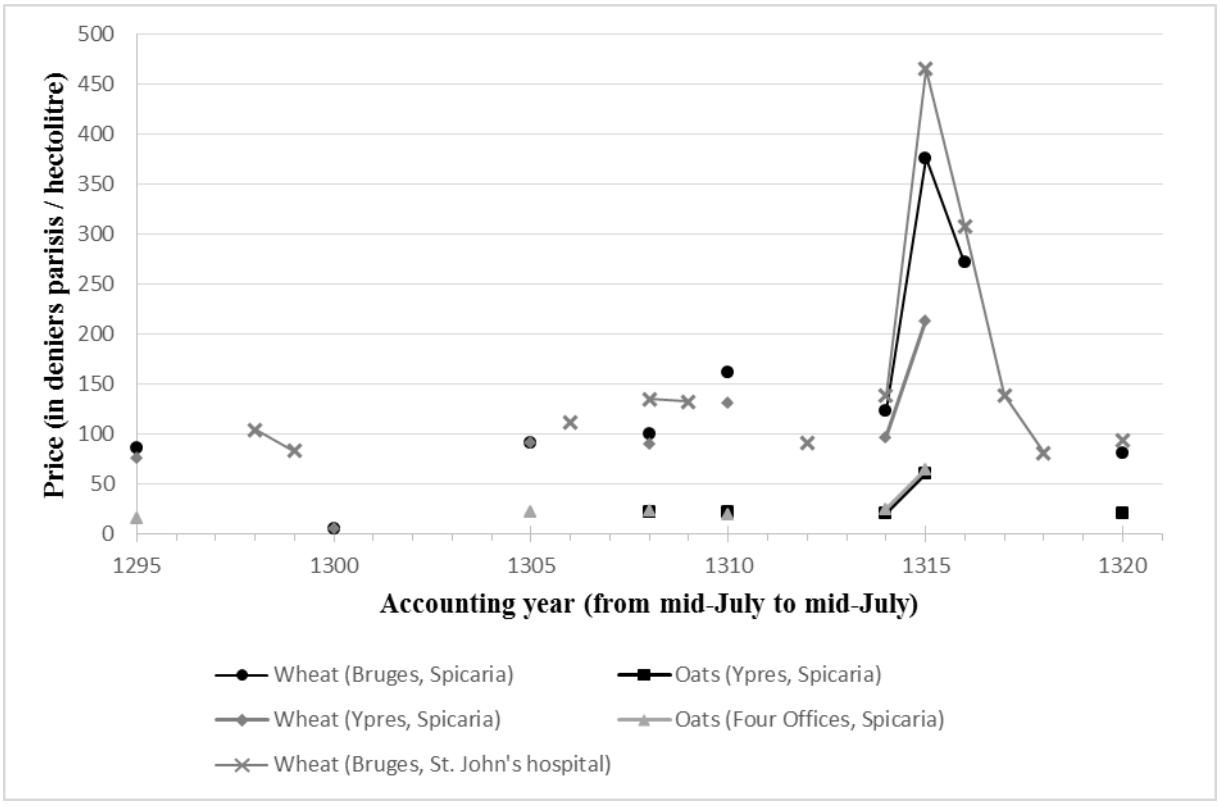

Source: ARB, Fonds Rolrekeningen, III Renengues, no. 267, 269-277.
Notes: 1316 only refers to the *spicaria* of Bruges

1305).[35] In 1297, 1299, 1302, and 1304, the Flemish countryside near the frontline suffered greatly from the many battles and food raids.[36] Fighting ceased in August 1304, but one year later the share of arrears was still relatively large. Because both rulers used confiscations as a repressive instrument, many plots of land changed ownership and this, in turn, hindered collection. The peace treaty of Athis-sur-Orge (1305) further complicated the situation by restituting all the goods of the Lilies. For example, count Robert of Béthune was unable to collect his income in large parts of Bergues and Veurne, since many plots were still in the hands of the men of king Philip IV the fair.[37] It is no coincidence that the share of arrears was the largest in the two regions with the most Lilies, namely Oudburg and Cassel (respectively 69% and 58% of the income was uncollected).[38]

[35] For the causes and the progress of the war see: Boone, 'Een verstedelijkte samenleving'.
[36] Johnstone, *Annales Gandanses*, pp. 3-83.
[37] Brussels, Algemeen Rijksarchief België (hereafter ARB), Fonds Rolrekeningen, III Renengues, no. 270.
[38] Prevenier, 'Motieven voor leliaardsgezindheid', p. 287.

The case of the Ghent Lily Philippe dou Val is most telling. Between 1297 and 1300, the count confiscated all his belongings, but the peace treaty reverted this action.[39] Therefore, Phillipe dou Val became again responsible for collecting and paying revenue to count Robert of Béthune in 1305. However, a list of all defaulters - called the *arrièrage* - shows that he failed to fulfill these obligations.[40] We can thus assume that the rise of arrears in this period is connected to the political context. The destruction and redistribution of property hindered the collection of revenue. Moreover, some Lilies remained reluctant to obey the count, even after the peace treaty.

*Figure 2. Evolution of the average grain price per castellany.*




Sources: ARB, Fonds Rolrekeningen, III Renengues, no. 267, 269-277.
Soens,'Waterbeheer in een veranderende samenleving', pp. 565-567
Notes: 1 hectolitre = 0.344 quarters

[39] Ibid., p. 282.
[40] ARB, Fonds Rolrekeningen, I Recette générale de Flandre, no. 3.

The second phase encompasses the period between 1306 and 1320. During this time, the share of arrears showed a downward trend that was only interrupted in the years 1310-11 and 1315-16. Contrary to the first phase, the political context cannot explain these two moments of failing collection since military conflicts with France were limited (see section III). Here, the economical context holds the key to an explanation. In England, the crop yields between 1306 and 1320 were above average, except in 1310 (only wheat; 18% below average) and 1315-17 (39%, 63% and 10% below average).[41] Chronicles and the average grain prices calculated from the *renenghelles* suggest that the harvest in the county of Flanders followed a similar trend (see figure 2).[42]

How, then, should we interpret this correlation between harvest failures and falling collections? Were people unable to pay, did they refuse to do so, or was the opportunity cost too high for the count? In case of the latter, one expects the count to focus on the most profitable regions. Following this logic, we should see a correlation between total theoretical income and the arrears. However, in Veurne the share of arrears in 1315 was the second highest (see table 1), despite it being the second most profitable *spicaria* in terms of theoretical income. Inversely, Bourbourg had the least uncollected revenues, while its income was deemed to be far less than Veurne's: 50,991 compared to 716,141 deniers parisis.[43]

For the other two possibilities, the *arrièrages* provide more insight. For the year 1307-8, a list of 87 defaulters is preserved for the *spicaria* of Bourbourg, Veurne, Bruges, and Bergues.[44] It shows that nobility, clerics, and burghers constituted only a minority (6%) and the sums owed by all defaulters were relatively small (median = 78 deniers parisis or 2.4 workdays for a master

[41] See footnote 12.

[42] In 1310, only the wheat price increased significantly in Flanders. In this year, chroniclers reported a bad harvest due to heavy rainfall. Oats, on the other hand, are more resistant to wet weather. Subsequently, the harvest was probably less affected and prices remained steady. In England too, the harvest of wheat failed and increased the price. However, the prices of all other grains also increased, despite average yields. Here, a combination of none-agricultural factors had caused prices to increase since 1305. De Keyser and Van Loey, *Spiegel historiael*, pp. 17-18; Schneider, 'Evaluating the Effectiveness', pp. 14-16; Mate, 'High prices'.

[43] ARB, Fonds Rolrekeningen, III Renengues, no. 274.

[44] ARB, Fonds Rolrekeningen, I Recette générale de Flandre, no. 2.

carpenter).[45] Furthermore, the list contains only one Lily. The lord of Penes, one of the richest landowners in the confiscation list, owed the count 39 deniers parisis in 1307-8. If we compare this with the 57,292 deniers which Philippe dou Val failed to pay in 1305, we can hardly call the lord of Penes an insubordinate Lily. Therefore, the majority of the 87 defaulters (94%) were presumably peasants who could not afford to pay (a part of) revenue. As such, the share of arrears can be used as a proxy for regional vulnerability between 1306 and 1320.

In order to assess the vulnerability to the Great Famine, we have calculated the rise in the share of arrears (see table 1). Because the yearly arrears were not always recorded and because the *renenghelles* are only partly preserved, this is limited to the first year of the famine (1315-16) and to six castellanies. Ypres and Cassel top the list of most affected regions. Here, the share of arrears reached, respectively, 66% and 96% of the theoretical income. In the castellanies of Bruges and Veurne, the amount of uncollected revenue more than doubled. Only in Bourbourg did the share of arrears remain limited. In the next sections, we will try and explain these regional differences in vulnerability.

*Table 1. The regional impact of the Great Famine*

| *Spicaria* | *Share of arrears (in % of theoretical income)* | | *Increase in 1315 (1314=100)* |
|---|---|---|---|
| | *harvest 1314* | *harvest 1315* | |
| Bourbourg | 8% | 4% | 50 |
| Bruges | 6% | 14% | 233 |
| Ypres | 10% | 66% | 660 |
| Cassel | / | 96% | / |
| Oudburg | 32% | 48% | 150 |
| Veurne | 22% | 68% | 309 |

*Notes:*

Values are rounded to the nearest one

/: no data

Source: ARB, Fonds Rolrekeningen, III Renengues, no. 273 and 274.

III.

[45] Based on the average daily wage of a Ghent master carpenter in 1320's. Thoen, *Landbouwekonomie en bevolking*, p. 1318.

There is no doubt that the Great Famine started with the adverse weather. Just as in the rest of Northern Europe, the summers of 1314-16 were unusually wet and cold in the county of Flanders.[46] The confiscation list from 1315-16 gives us more specific information about the consequences of this weather. The functionaries regularly reported that the crops were destroyed by water. Thanks to a detailed account, we can even quantify these destructions for the castellany of Bourbourg. Here, the rain destroyed approximately one fourth of the crops (26% of the cultivated area).[47] Unfortunately, we lack comparable data for the other regions. But if we accept the hypothesis that environmental conditions played a decisive role in the returns of grain yields, we can assess the impact of crop losses by comparing soil types, climate, and relief with our proxy for regional vulnerability.

Generally speaking, we can divide the county into two areas: coastal Flanders and inland Flanders. The former corresponds approximately to the castellanies of Bourbourg, Bergues, Veurne, Bruges, and the Four Offices. The vicinity of the sea makes this area prone to storms and flooding. Furthermore, the dense clay soil and the low-lying grounds hindered water drainage. In contrast, inland Flanders is situated at a higher level. Its sandy and sandy-loamy soil can cope better with heavy rains. The weather of 1315-17 must, by this logic, have affected the yields in coastal Flanders more than in inland Flanders. As table 1 shows, the share of arrears was nonetheless on average lower in the castellanies near the sea. This suggests that environmental factors alone cannot account for the regional differences.[48]

In order to explain the extent of the Great Famine, historians also point to warfare. According to famine theories, the impact of warfare on entitlements can be disaggregated in three clusters. The first cluster concerns the disruption of local economies through the destruction of property,

[46] Buisman, *Duizend jaar weer*, vol. 2, pp. 54-64; Alexandre, *Le climat*, pp. 436-439.
[47] 102.88 Out of 390.24 hectare was destroyed by the rain. ADN, Série B, no. 6949, fos. 1R-13R.
[48] According to Ian Kershaw, the influence of environmental factors is rather local than regional. For example, the presence of fungi who thrive in humid conditions, such as mildew, may affect crop yields. Kershaw, 'The Great Famine', pp. 18-19.

the contraction of markets or the displacement of people. Secondly, armed conflicts transfer entitlements through the requisitioning, confiscation or pillaging. Lastly, soldiers may deliberately undermine entitlements through unruly practices, such as prolonging a siege to cause starvation.[49] While several scholars have pointed out the destruction of property and the burden of taxation, other aspects of warfare have rarely been explored for the Great Famine. In what follows, we therefore assess the impact of the French-Flemish war in more detail.

In 1314, the French king Philip IV tried to reinstitute his suzerainty over Flanders by installing garrisons in the cities of Cassel and Kortrijk, but the Flemish reacted by liberating the latter city. With the accession of a new king, Louis X, the conflict escalated. In August 1315, Louis X marched with a sizeable army to besiege Kortrijk, but a combination of internal struggles and bad weather made him abandon his siege. In 1316, a second invasion in Cassel was quickly repelled, and, shortly afterwards, the kingdom of France and the county of Flanders made peace.[50]

In comparison with the first French-Flemish war (1297-1305), conflict in the second one remained limited. There were no direct confrontations between the armies and most of the county was spared. Only in a small part of the castellany of Kortrijk does the confiscation list report properties destroyed by the war.[51] The French garrison in Cassel did not join the fight and no properties were razed as a consequence.[52] Nevertheless, the presence of French soldiers stimulated the resistance of the Lilies in the region.[53] In this regard, we must not interpret the high share of arrears in the castellany of Cassel (96%) as an indication of the impact of the Great Famine. Rather, it is comparable with the situation in 1305. Count Robert of Béthune was simply unable to collect his revenue.[54] In contrast, the count remained firmly in control of the

[49] Devereux, 'Sen's entitlement approach', p. 257-258.
[50] Boone, 'Een verstedelijkte samenleving', pp. 72-76; Prevenier, 'Leliaards en Klauwaards', pp. 137-160.
[51] ADN, Série B, no. 6949, fos. 54V-55R.
[52] Ibid., fo.31R.
[53] ARB, Fonds Rolrekeningen, III Renengues, no. 274.
[54] 'Because we could not collect out of fear for the enemy.' ADN, Série B, no. 6949, fo. 30R.

other regions. In 1315, Robert ordered the confiscation of all goods belonging to Lilies. Without the hope of support from a French army, there was little the Lilies could do. Again, the case of the Ghent Lilly Philippe dou Val is most telling. Just as in 1297-1300 (see section II), he fled to France and all his goods were confiscated. But this time Philippe did not return to Flanders after the peace, despite the renewed promise of restitution. Instead, he settled down in Paris as a draper.[55]

Aside from political repression, the confiscations of 1315-16 also served an economic purpose: the count hoped to finance the war. The manner in which these confiscations occurred differed according to the distance from the frontline. Count Robert of Béthune wanted to halt the invasion by securing the whole of the river Lys. Flemish troops guarded the river and its bridges in the castellanies of Kortrijk, Ypres, Comines-Warneton, and Cassel.[56] As a protection against the French garrison at Cassel, the count reinforced the castle of Poperinge with crossbowmen.[57] In order to feed all these forces, the collectors focused on the confiscation of crops in the aforementioned regions. More than half of all confiscated grain came from the castellanies of Cassel (27%) and Ypres (24%). Here, a part of the local harvest thus never reached the markets, which worsened the food shortage. In contrast, the functionaries collected mainly cash from the more remote regions. Of the total confiscations in cash, 27% came from the castellany of Bruges, while Ypres only accounted for 4%.

The situation in Ypres was probably made worse by a second factor. Because of its central position between occupied Cassel and besieged Kortrijk, the city played a vital role as distribution and communication centre. By order of the count, many confiscations in kind were sent from different castellanies to Ypres.[58] Furthermore, it is quite possible that Robert of Béthune bought up grain on the markets of Ypres and/or requisitioned the harvest of non-Lilies.

[55] Ibid., fo. 61R; Prevenier, 'Leliaards en Klauwaards', p. 151.
[56] ADN, Série B, no. 6949, fo. 39R.
[57] Ibid., fo. 30V.
[58] Ibid., fo. 43V.

If so, more people became dependent on an already exhausted market. In any case, the extreme rise in the share of arrears (660%) indicates that the castellany suffered severely from its logistical role in the French-Flemish conflict.

The combination of war and rain caused several other problems. Firstly, the heightened humidity complicated the storage of grain. Chief collector Jakemin de Tournay was forced to sell parts of the confiscated and stored grain because it was moldy.[59] Secondly, the heavy rainfall was responsible for the destruction of infrastructure. Near the village of Watten, the water of the river Aa rose so high that it endangered the dikes and the floodgates.[60] Furthermore, many mills and roads were damaged.[61] As mentioned before, the omnipresent mud even impeded the invasion of Flanders. Indeed, transportation became difficult. For example, the collectors Wauter de Tournay and Philippe delle Spriette had to hire a boat to confiscate properties.[62]

Another effect of the war and rain was the disruption of the international grain trade. Obviously, the harvest failures meant in the first instance that there was less grain to trade. Faced with this shortage, political leaders and institutions tried to protect their home market through legislation. For example, the English king prohibited the export of grain in 1315, 1317, and 1322.[63] Furthermore, blockage was an often used tactic during fourteenth-century wars. Between the summer of 1315 and the autumn of 1316, the French king Louis X banned all exports to Flanders.[64] To what extent this enhanced the crisis in the county is uncertain. Although it is recognized that the county relied on food imports to feed its highly urbanized population, we do not have the sources to quantify the importance of this trade before the Black Death. What we do know from narrative sources and research on the fifteenth century is that the grain import

[59] Ibid., fo. 43R.
[60] Ibid., fo. 13R.
[61] Ibid., fo. 46V.
[62] Ibid., fo. 27R.
[63] Hybel, 'The grain trade', pp. 237-238; Sharp, B., ‘Royal paternalism’, pp. 638-640.
[64] Jordan, *The Great Famine*, p. 169.

from Northern France exceeded the import from any other region by far. Alain Derville estimated the exportable surplus of Northern France at 1.5 million hectolitres around the year 1400, most of which was directed to Flemish markets. In contrast, England only accounted for 3,000 hectolitres per year and import from the Baltic region was still marginal in the early fourteenth century.[65]

A disruption of trade with Northern France would thus have been disastrous for the county in normal years. However, 1315-17 was everything but normal. Just as in the rest of Northern Europe, the harvest failed miserably in Northern France. In Béthune, the price of wheat had tripled (from 6.34 to 19 sous Artois per hectolitre), which is comparable with our data for Bruges (from 124 to 377 deniers parisis per hectolitre; see figure 2).[66] So even without the blockade, the exportable surplus was limited and trade with Northern France would have offered little relief. The impact of this blockade becomes even more questionable if we take its effectiveness into account. The fact that Louis X had to repeat the ban twice indicates that at least some merchants still supplied the county. The Flemish merchants circumvented the prohibition from their side by hiring intermediaries to buy grain in France.[67] Lastly, the impact of the ban was (partly) compensated by the temporary expansion of other trade routes. The municipalities of Flanders increased the grain import from England, Scotland, Spain, Portugal, and Italy. These last three regions were especially important since they were not affected by harvest failures. For example, in 1317 the city of Bruges bought 19,636 hectolitres wheat from Catalan, Genoese, and Venetian merchants.[68] Nevertheless, the high mortality in the city of

[65] Derville, 'Le grenier des Pays-Bas', pp. 276-277; Hybel, 'The grain trade'; Tits-Dieuaide, 'The Baltic grain trade'.
[66] Derville, *l'Agriculture du Nord*, p. 82.
[67] Jordan, *The Great Famine*, p. 169.
[68] Ibid., p. 169; Van Werveke, 'La famine de l'an 1316', pp. 12-13. Others resorted to piracy. For example, Flemish pirates boarded three ships on their way to England in 1316. See: Eddison, *Medieval pirates*, p. 96.

Bruges and Ypres (5-10% of the total population) suggests that the disruption of trade was disastrous.[69]

The above analysis shows that both shocks and FAD played an important role during the Great Famine. In the case of the war, the transfer of entitlements (confiscation) and the disruption of economies (trade, infrastructure) also had a great impact on vulnerability. Nonetheless, many of the regional differences we have outlined in section II remain inexplicable. In the next paragraphs we will therefore shift our attention from the external side of vulnerability (exogenous shocks) to a single aspect of the internal side (property rights).

## IV.

According to the theoretical framework of social agro-systems, the county of Flanders can be divided into coastal and inland Flanders based on differences in social relations and structures of the local societies, namely environment, property rights, power structures, income strategies, and farming techniques.[70]

In inland Flanders, the power struggle between the count, local lords, religious institutions, and the urban bourgeoisie led to the fragmentation of property rights. As a consequence, the development of large landownership and the scale of surplus extraction remained limited. Here, the majority of farms were freely held by smallholders. Because of the medieval population growth and the tendency of peasants to subdivide their holdings among their heirs, the average size of holdings declined through time. However, smallholders compensated this trend by intensive husbandry, commercialization, wage labour and proto-industrial activities. For

[69] Van Werveke, 'La famine de l'an 1316', pp. 6-8.
[70] For a recent overview see: Thoen and Soens, 'The family or the farm'.

example, they did not only cultivate rye and legumes for their own consumption, but also grew cash crops (madder, woad, etc.).[71]

Contrary to inland Flanders, the counts had successfully restrained the power of local elites in coastal Flanders already during the High Middle Ages. As a result, they could appropriate large amounts of waste land and sell it to urban and institutional investors in the twelfth and thirteenth centuries.[72] Furthermore, the frequency of floods increased from the late thirteenth century on due to over-exploitation and worsening of climatic conditions, which, in turn, resulted in the expropriation of many smallholders who could not keep up with infrastructure costs.[73] Subsequently, large landowners dominated the area and peasants had to engage in the lease market to obtain land. According to Robert Brenner they had 'to maximize their price:cost ratio, so as to remain competitive for their lease'.[74] As a result, peasants in coastal Flanders focused on an extensive form of mixed farming for the market. They specialized in cattle rearing and arable farming, chiefly wheat, oats, and vetches. At the same time, the importance of proto-industrial activities, like peat digging and salt making, declined.[75]

On the eve of the Great Famine, the above-mentioned processes were still in development. The rate at which this happened differed from place to place. In some regions of coastal Flanders, smallholders had lost their property rights already by the end of the thirteenth century, while in other regions this occurred only in the fifteenth century.[76] In order to map property structures in 1315, we therefore rely primarily on the confiscation list and only use the framework of social agro-systems to provide additional, qualitative information. We typify each castellany based on six characteristics that might have influenced regional vulnerability: property rights

[71] Brenner, 'The Low Countries', pp. 201-206 and 218-220 ; Thoen, 'Social agrosystems', pp. 58-62; Thoen, 'The birth of the 'Flemish husbandry''; Verhulst, 'l'Intensification et la commercialisation'.
[72] Thoen, 'Social agrosystems', pp. 54-58.
[73] Soens, *De spade in de dijk?*
[74] Brenner, 'The Low Countries', p. 220.
[75] Ibid., pp. 218-220; Thoen and Soens, 'The family or the farm', pp. 212-219.
[76] Thoen, 'Social agrosystems', p. 62.

of freeholders, the dominance of elite groups, lease prices, size of smallholdings, size of large holdings, and the share of rents in kind. For every characteristic we rank the different castellanies relative to each other, from high to low. A higher score indicates a potential higher vulnerability. In section V, these scores will be tested against the share of arrears.

*Table 2. Typology of the owners according to their property*

| | *Owners* | | | |
|---|---|---|---|---|
| | *Nobility (N=71)* | *Burghers (N=40)* | *Clergy (N=95)* | *Unknown (N=147)* |
| Owns 1 landholding | 54% | 63% | 55% | 75% |
| Owns > 4 landholdings | 18% | 8% | 21% | 3% |
| In 1 castellany | 82% | 90% | 71% | 97% |
| Total value (in d.par.)[a] | 20,685 (N=14) | 11,220 (N=8) | 7,440 (N=18) | 2,640 (N=24) |
| Annual revenue (in d.par.)[a] | 10,800 (N=52) | 3,840 (N=24) | 10,560 (N=78) | 2,400 (N=68) |
| Total size (in ha.)[a] | 7.51 (N=22) | 17.20 (N=15) | 11.94 (N=14) | 4.40 (N=64) |

*Notes:*

Percentages are rounded to the nearest one percent

N: total number of observations

[a]: Median

Source: ADN, Série B, no. 6949, fos. 1R-98R.

Let us first turn to the cluster of characteristics which deal with owners. Within the confiscation list, we can discern four groups. For nobles, clerics, and burghers the functionaries always mentioned their status, title, and/or profession. The individuals for whom we only possess a name constitute the fourth group. Although we do not have any direct information for this group of unknowns, we can derive their status by comparing their property with that of the three other groups. As table 2 shows, the property of the former was less extensive and was virtually always confined to one castellany. Furthermore, the value of their property was limited. It was only

worth a tenth compared to the property of nobles. Nonetheless, the unknowns were far from poor. With a median annual revenue of ten pound parisis and a median freeholding of 4.4 hectares, they possessed more means than most peasants in the county. Confiscation lists from a later period (1329-1331) show that the majority of land-owning peasants held less than three hectares.[77] As such, the group of unknowns presumably belonged to the higher social stratum of peasant freeholders.

By calculating the proportion of peasant freeholders in the total of all landowners, we can measure the degree to which local peasants were able to own land freely (see table 3).[78] We expect that regions with more local freeholders were more resistant to the Great Famine, because they were, compared to absentee landowners, more likely to reinvest the profit from a piece of land. For example, Tim Soens has pointed out that the rise of absentee owners in coastal Flanders coincided with a decreasing interest in water management. As a consequence, the region became more prone to the effects of storm surges.[79] In 1315, peasant freeholders enjoyed strong property rights in the castellanies of Bourbourg (75% of the landowners were peasant freeholders), Cassel (63%), and Bailleul (57%). However, in six regions their share remained under 25%.

A second characteristic of the owners focuses on the dominance of one elite group. The distribution of property rights among different social groups can have a positive effect on vulnerability. For instance, the power struggle between elites in inland Flanders hindered the evolution of low and fixed rents towards high and variable rents for a long time.[80] On the other hand, strong elites did not always have a negative impact. Urban authorities often tried to secure access to food for their citizens through trade regulation, confiscation of private stocks or

[77] These confiscations occurred after the peasant revolt in Coastal Flanders (1323-1328). Mertens, 'De economische en sociale toestand', pp. 1149-1151.
[78] Landowners refer to all owners who lease out their land or who manage their land themselves. Owners of rents, tithes or customary rents were not included in the calculation.
[79] Soens, *De spade in de dijk?*
[80] Thoen and Soens, 'The origins of leasehold'.

purchases on foreign markets.[81] Lords could help their tenants by providing credit or deferring lease payments, while religious institutions provided charity. However, in practice such measures were often ineffective or were restricted to certain privileged groups.[82] We have therefore scored the dominance of one group negatively for vulnerability, but further analysis will be made in the next section. To assess the dominance, we have calculated the distribution of land ownership between clerics, nobles, and burghers. Table 3 shows which elite group counted the most landowners for every castellany and how large their share of the total of all elite landowners was. According to the confiscation list, nobles dominated land ownership in Flanders. In the castellany of Bailleul, for example, eleven out of twelve elite landowners were noble. Only in the regions of Veurne, Bruges, and Bourbourg, did another elite group dominate. The other four characteristics focus on property. Compared to the characteristics of the owners, their impact on regional vulnerability is more ambiguous. A higher lease price in one region might point to a higher degree of surplus extraction, but also to a better soil quality.[83] Despite the lack of data about soil quality, we can solve the ambiguity by comparing the lease prices with our results for the property rights of the peasant freeholders (see above). A strong inverse correlation exists between these two characteristics.[84] In other words, average lease prices were lower in regions where more peasants owned their land freely. A possible explanation lies in the demand for leaseholds. When peasants had a decent chance to own a freehold, the lease market was less competitive. Indeed, in inland Flanders, lease prices remained low throughout the Middle Ages. Here, fixed customary rents in kind or money were common. In contrast, leasehold gradually became the dominant form of landholding in

[81] See footnote 68; Palermo, *Sviluppo economico*; Jordan, *The Great Famine*, pp. 156-162.
[82] Ibid., pp. 108-114.
[83] A third option is the size of the leasehold, whereby the lease price per hectare decreases if the total size increases. Data from the confiscation list, however, contradicts such a correlation ($R^2<|0,1|$).
[84] $R=-0.89$; $R^2=0.78$; $p<0.05$

*Table 3. The six characteristics of property rights per castellany*

| *Castellany* | *Peasant freeholders* | | | *Dominant elite* | | | | *Lease price* | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *Share* | *N* | *Rank* | *Share* | *Group* | *N* | *Rank* | *d./ha.* | *N* | *Rank* |
| Aalst | 0% | 39 | 11 | 51% | nobility | 39 | 4 | 434 | 8 | 4 |
| Bailleul | 57% | 28 | 4 | 92% | nobility | 12 | 10 | 268 | 8 | 2 |
| Bourbourg | 75% | 73 | 1 | 50% | burghers | 18 | 1 | 264 | 18 | 1 |
| Bruges | 10% | 10 | 10 | 56% | clergy | 9 | 6 | / | / | / |
| Ypres | 20% | 10 | 6 | 50% | nobility | 8 | 1 | / | / | / |
| Cassel | 63% | 8 | 3 | 67% | nobility | 3 | 7 | / | / | / |
| Comines-Warneton | 75% | 4 | 2 | / | / | / | / | / | / | / |
| Kortrijk | 17% | 12 | 8 | 50% | nobility | 10 | 1 | / | / | / |
| Oudburg | / | / | / | / | / | / | / | / | / | / |
| Oudenaarde | 15% | 13 | 9 | 55% | nobility | 11 | 5 | / | / | / |
| Bergues | 40% | 57 | 5 | 79 % | nobility | 34 | 9 | 318 | 28 | 3 |
| Veurne | 18% | 34 | 7 | 71% | clergy | 28 | 8 | 491 | 20 | 5 |

| *Castellany* | *Size smallholdings* | | | *Size large holdings* | | | *Rents in kind* | | |
|---|---|---|---|---|---|---|---|---|---|
| | *Ha.* | *N* | *Rank* | *Ha.* | *N* | *Rank* | *Share* | *N* | *Rank* |
| Aalst | (7.19)[a] | 5 | (3)[a] | 39.37 | 4 | 6 | 8% | 40 | 8 |
| Bailleul | 5.79 | 4 | 4 | 29.03 | 3 | 5 | 6% | 50 | 10 |
| Bourbourg | 2.92 | 36 | 8 | 53.80 | 8 | 9 | 18% | 61 | 5 |
| Bruges | 7.82 | 3 | 2 | 26.72 | 5 | 4 | 6% | 16 | 9 |
| Ypres | 5.62 | 2 | 5 | 14.55 | 2 | 1 | 26% | 23 | 4 |
| Cassel | 1.59 | 2 | 9 | / | / | / | 40% | 5 | 1 |
| Comines-Warneton | / | / | / | 22.05 | 3 | 3 | 0% | 5 | 11 |
| Kortrijk | / | / | / | / | / | / | 34% | 35 | 2 |
| Oudburg | / | / | / | / | / | / | 13% | 8 | 7 |
| Oudenaarde | 9.53 | 2 | 1 | 17.82 | 3 | 2 | 29% | 24 | 3 |
| Bergues | 4.38 | 16 | 7 | 44.04 | 10 | 8 | 14% | 63 | 6 |
| Veurne | 5.03 | 7 | 6 | 40.55 | 7 | 7 | 0% | 44 | 11 |

*Notes:*
Percentages are rounded to the nearest one percent.
For the size of holdings we've calculated the average size of all the land owned by one person per castellany.
For the lease price we've calculated the average in deniers per hectare.

N: total number of observations
/: too few or no data
a: exclusively elites

Source: Rijsel, ADN, Série B, no. 6949, fos.1R-98R.

coastal Flanders from 1250 on.[85] On the eve of the Great Famine, this evolution was most advanced in the castellany of Veurne, where the average lease price was the highest observed (see table 3). Inversely, the low lease prices and the large proportion of peasant freeholders in Bourbourg suggest that such changes had not yet occurred in the castellany. It is quite possible that the degree of surplus extraction increased Veurne's vulnerability to famines.[86]

To typify the size of holdings, we distinguish smallholdings from large holdings - respectively the fourth and fifth characteristic. For every castellany, we calculated the total size per person of all the holdings he/she owned. If the total was greater than ten hectares, we categorized the property as a large holding. This division stems from the profile of the owners and corresponds with the categories used in secondary sources.[87] In the confiscation list, the majority of smallholders (65%) were peasant freeholders, whereas the large landowners were mainly elites (69%). The size of smallholdings is therefore indicative of the amount of land peasant freeholders could claim in a region. At first glance, we would expect that a smaller average size of smallholding would result in a higher degree of vulnerability, because peasants would have less access to food resources. Based on theoretical household budgets, historians have estimated the minimum required size of a holding, for a medieval peasant family to fulfill their basic needs, as between four and seven hectares.[88] The confiscation list shows that in most regions the peasant freeholders possessed this minimum (see table 3). Only in the castellanies of Bourbourg (2.92 ha.) and Cassel (1.59 ha.) did the average smallholding fall below the threshold of four hectares. At the same time, smaller holdings might have positive effects on regional

[85] Thoen and Soens, 'The origins of leasehold', pp. 36-39.

[86] Leaseholds can have a positive effect if the risk is shared between owner and farmer. However, Soens showed that lease contracts were not a solid insurance mechanism in the late medieval period. Only the prosperous tenants were able to negotiate rebates. Soens, 'Between fragmentation and engrossment.' (unpub. paper, 2015).

[87] Soens, *De spade in de dijk?*, p. 74.

[88] Kitsikopoulos, 'Standards of living', pp. 49-50. The average varies according to regional farming methods. Kitsikopoulos used an average yields per seed ratio of 1:4 to calculate the required size of seven hectares in England. Since Flanders was known for its intensive agriculture, with yields per seed reaching up to 1:30 around 1300, we have taken the low estimation of 4 hectares as threshold. Thoen, 'The birth of the 'Flemish husbandry'', pp. 79-81.

food security. Smallholders can save on labor forces, since a family could work the land by themselves. Furthermore, differences in size can be compensated with a more intensive form of agriculture, resulting in higher yields per hectare.[89] The question, however, is whether these advantages outweighed the limited size of the holding and, if so, to what extent. It is highly unlikely that the peasant freeholders in Cassel could live solely from their 1.59 hectare thanks to intensive farming. Although the market provided such peasants with additional sources of income, they were, by the same token, more dependent on the market to secure their basic needs. Consequently, they may have been more vulnerable to the extreme price fluctuations during the Great Famine. The image is less clear for the castellanies where peasant freeholders possessed on average between four and seven hectares. Unfortunately, the confiscation list contains too few data to assess regional farming methods. We can therefore rank the castellanies only by the average size of smallholdings: the smaller the holding, the higher the score.

The size of large holdings gives an indication of the amount of land which elites possessed. Again, the relationship to regional vulnerability is ambiguous. For instance, large farms can have a positive influence, because they provide job opportunities. However, Ian Kershaw showed that large landowners in England, in fact, saved on labor during the Famine. They reduced their household or suspended the wages in kind for a year.[90] Such measures were disastrous: families did not only have to cope with extreme grain prices but also with a loss of income. A second strategy of the large landowners exacerbated this situation. As Philip Slavin has shown, English lords did not sell their grain after the 1315 harvest. Instead, they postponed the sale until the next summer, when market prices peaked.[91] Because larger holdings could, arguably, store more grain and disrupt the market more, we have given castellanies where elites

[89] For a theory on the complex relations between smallholdings and food security see: Maxwell and Wiebe, 'Land tenure', pp. 831-832.

[90] Kershaw, 'The Great Famine', pp. 11-12. Although we do not have direct references for Flanders, we know that large landowners hired harvest workers in correlation to the yields. Consequently, the harvest failure of 1315 resulted in less labour opportunities in the area. Vervaet, *Goederenbeheer*, pp. 153-156.

[91] Slavin, 'Market failure', pp. 42-46.

possessed larger estates higher scores (see table 3). In the early fourteenth century, the size of large holdings in Flanders was limited: based on the confiscation list, regional averages fluctuated between 14 and 54 hectares.

The last characteristic concerns the share of rents in kind. On the one hand, they have an adverse effect on regional vulnerability. During times of food shortage, the value, and hence the burden, of rents in kind increases. On the other hand, these collections can also point to a lesser degree of surplus extraction. In the High Middle Ages, fixed customary rents were common in Europe but, from 1250 on, large landowners tried to replace them with variable rents to counter the devaluation of their income: inflation and rising productivity affected, respectively, the value of their fixed rents in money and in kind. During the same period, the medieval economy was monetized and rents in kind lost their importance.[92] In this respect, payments in kind may reflect the older tradition of fixed rents. Since their value had decreased over time, the impact on regional vulnerability in 1315 may have been positive. The data of the confiscation list seem to confirm this hypothesis. When we calculate the value of the rents in kind during the Great Famine, they resemble the rents in money. The median of the former amounted to 83 deniers parisis per hectare, whereas the median of the latter was 82 deniers parisis per hectare.[93] In normal years, the grain price was far lower, as was the value of the rents in kind. For example, Wystasses Barnaige would have paid an equivalent of 2234 deniers parisis for renting 21.5 hectares in 1315, compared to 735 deniers parisis in 1314.[94]

[92] Spufford, *Money and its use*, pp. 243-245; Thoen, 'The birth of the 'Flemish husbandry'', p. 83.
[93] We calculated the value of rents in kind by multiplying the amount of grain per hectare by the average grain price in the confiscation list. ADN, Série B, no. 6949, fos. 1R-98R.
[94] Wystasses paid 593 litres of grain for rent. Ibid., fo. 64V.

V.

Of course, the above six characteristics are not the only factors of landholding that may have influenced regional vulnerability. For example, the confiscation list does not provide (sufficient) data about farming techniques, soil quality, or household structures. Nevertheless, the studied characteristics give us enough insight into the socio-economical and socio-political aspects of landholding to compare the typology with our results of regional vulnerability (Table 1). Because war distorted the share of arrears in Cassel and Ypres, we will focus only on Bruges, Oudburg, Veurne, and Bourbourg to test its relationship with each characteristic.

The first characteristic, property rights of peasant freeholders, does not show a correlation with regional vulnerability (see table 4). According to the confiscation list, the share of peasant freeholders was larger in Veurne than in Bruges, yet the crisis hit he former much harder (309% increase in arrears vs. 233% in Bruges). The presence of a larger population of peasant freeholders does not, apparently, determine regional vulnerability. Similarly, the size of small- and large holdings did not influence the share of arrears. If we combine both characteristics, however, the correlation seems very strong.[95] Bruges counted fewer peasant freeholders than Veurne but the size of their recorded property was more than twice as large. Inversely, the region of Bourbourg had more peasant freeholders with smaller holdings. Here too, the famine caused less suffering among peasants than in Veurne (50% decrease vs. 309% increase). These two cases show that we cannot assess the inclusivity of property rights without taking the distribution of land into account and vice-versa.

Although the compensating character of the above factors can explain the difference in impact of Veurne, it remains unclear why Bruges was more affected than Bourbourg or Oudburg. Let us therefore turn towards the remaining characteristics, which deal with power relations. The

*Table 4. Correlation between characteristics of property rights and the increase in arrears*

| *Characteristics* | $R_s$ |
|---|---|

[95] $R_s$=1. Due to the small sample size, the statistical significance cannot be calculated.

| | |
|---|---|
| Peasant freeholders | (0.5) |
| **Dominant elites** | **1** |
| Lease price | / |
| Size smallholdings | (0.5) |
| Size large holdings | (0.5) |
| **Rents in kind** | **1** |

*Notes:*

Due to the small sample size, the significance cannot be calculated. Subsequently, we reject any correlation when $R_s < 1$.

Source: table 1 and 3

share of rents in kind shows a strong correlation with regional vulnerability (see table 4). A similar correlation exists between food security and the dominance of elites. Indeed, for these factors the castellany of Bruges scored less than Bourbourg and Oudburg. For the last characteristic, the lease price, the data was insufficient to calculate the relationship.

How, then, should we interpret the relationships just described? How do we explain the link between regional vulnerability and famine? Firstly, the fact that the two characteristics of power relations independently exhibit the same correlation should be given the necessary importance. Peasants could ensure their entitlement to food better when regional elites were internally divided. As we saw, the power struggle in inland Flanders hindered the evolution of fixed low rents towards variable high rents. According to the confiscation list, the surplus extraction of peasants remained limited in Bourbourg and Oudburg. As a result, they could rely on a higher profit margin and were able to tolerate losing a larger part of their harvest before facing financial problems. In addition, the timing of the Great Famine may have enhanced the contrast between regions with fixed rents and those with variable rents. In England, ten consecutive years of above-than-average harvests preceded 1315.[96] It is therefore plausible that elites increased the

[96] Between 1305 and 1314 the average composite crop yields in England was 16.7% above average (see footnote 12). For Flanders we lack comparable data, but grain prices (see figure 2) seem to confirm a similar trend.

variable rents just before the Great Famine. It is not a coincidence that lease prices were twice as high in Veurne as in Bourbourg.

Secondly, the ambiguous character of the combination 'share peasant freeholders' and 'size smallholdings' needs clarification. Why is it that both a small population of peasant freeholders with large holdings and a larger population with smaller holdings correspond to a lower degree of vulnerability? The explanation presumably lies in income strategies and the possibilities for hoarding. In normal years, peasant freeholders in Bruges and Veurne could survive from their land alone. The heavy rainfall during 1315 destroyed approximately one fourth of the crops (see section III). Consequently, peasants in Veurne could, theoretically, only count on 3.7 hectares. This falls below the threshold of four hectares, which is the presumed minimum for self-sufficiency during the Late Middle Ages. In contrast, peasant freeholders in Bruges still possessed 5.8 hectares.[97] A different situation occurred in Bourbourg. Due to the limited size of their holdings, we can safely assume that the peasant freeholders had additional sources of income (probably through fishing or peat digging). In this respect, their income strategy in 1315 resembled more the one we described for smallholders in inland Flanders. As such, Bourbourg's peasant freeholders were less dependent on their land and the market than those of Bruges or Veurne, whose typology corresponds with the income strategy of coastal Flanders. Furthermore, the confiscation list shows that the number of large landowners in Bourbourg were limited compared to peasant freeholders. Arguably, there were fewer farms able to hoard large amounts of grain and peasants were probably less dependent on wage labour on those farms. It would seem that a large proportion of the peasant freeholders with strong property rights and a differentiated income thus had a better entitlement to food, even during the Great Famine.

[97] Although the 25% crop loss is based on data for Bourbourg, it is the best proxy we have. Even if we use Campbell's figure for English yields in 1315 (39% below average), the peasants in Bruges had more than 4 hectares left (4.77 hectares). Campbell, 'Nature as historical protagonist', p. 288.

## VI.

This article started with the observation that the theoretical approach of the Great Famine as part of a larger fourteenth-century crisis has limited our understanding of the worst subsistence crisis in European history. By using the perspective of entitlements instead, we were able to re-examine the effects of external shocks on regional vulnerability and analyse the interaction with property rights in 1315-17.

Firstly, the adverse weather in Flanders was, like elsewhere in Northern Europe, disastrous for the harvest and the international grain trade. Nonetheless, environmental conditions could not explain why some regions were more affected than others. Secondly, the clichéd image of a general tax burden on peasants and the destruction of farms within a limited region, does not do justice to the complex impact of war. In our case study, the number of destructions were negligible. Far more important was the count's policy in funding and organizing the war. Functionaries near the warzone focused on confiscations in kind to feed the troops, while they collected mainly cash from the more remote regions. As a result, the markets near the front were further depleted. Ypres especially suffered from its logistical role during the French-Flemish conflict. In this case, war mainly caused a transfer of entitlements through confiscations, rather than a decline in production-based entitlement through destructions.[98]

Moving from the external to the internal facets of vulnerability, we focused on property rights over rural land. An important role was attributed to power relations. In Veurne, the clergy dominated landownership and imposed heavy burdens on peasant leaseholders. Income strategies seemed to influence vulnerability as well. Regions where peasants relied solely on their limited landholding were probably hit harder by the harvest failures of 1315. In Bourbourg,

[98] Nonetheless, when destructions occur, they can have a great impact on food security. See for example: Slavin, 'Warfare and Ecological Destruction'.

where the crisis was limited, peasant freeholders had presumably adopted a differentiated income strategy to compensate for the smallness of their plots. Lastly, the relative number of great landowners may have contributed to the impact of the Great Famine. In those castellanies where their share was limited, we assume that less grain could be hoarded and less people depended on the labour opportunities connected to large farms. It is, however, important to note that the impact of these three factors is not a deterministic one. Property rights must be evaluated within their regional and local context. For instance, we found that the correlation between the size of holdings and the share of arrears was rather limited. Income strategies and the inclusivity of property rights could compensate for the disadvantages of smaller holdings. For the same reason, we should be wary of the limitations of our sources. While the confiscation list gave us insight into six characteristics, many other factors of property rights, such as soil quality or farming techniques, remained obscured and may have influenced vulnerability.

As both Slavin's study on market failures and our analysis of property rights show, it is high time we move beyond the general framework of the fourteenth-century crisis and study the Great Famine and, by extension, any medieval famine in its own right. To this end, recent theories on contemporary famines, prove to be a useful framework, even for the county of Flanders where sources are scarce. However, many questions still need to be answered. For instance, how did differences in labour markets or poor relief interacted with harvest failures and affected regional vulnerability? Only through such multi-causal explanations can we hope to understand why the Great Famine resulted in the worst subsistence crisis in European history.

***Footnote references***

Abel, W., *Agricultural fluctuations in Europe: From the thirteenth to twentieth centuries*,

Alexandre, P., *Le climat en Europe au Moyen Age, contribution à l'histoire des variations climatiques de 1000 à 1425, d'après les sources narratives de l'Europe occidentale* (Paris, 1987).

Baro, M. and Deubel, T.F., 'Persistent hunger: Perspectives on vulnerability, famine and food security in Sub-Saharan Africa', *Annual Review of Anthropology*, 35 (2006), pp. 521-538.

Boone, M., 'Een verstedelijkte samenleving onder spanning. Het graafschap Vlaanderen omstreeks 1302', in R. Van Caenegem, ed., *1302. Feiten en mythen van de Guldensporenslag* (Antwerpen, 2002), pp. 26-77.

Bourin, M. and Menant, F., 'Les disettes dans la conjoncture de 1300 en Méditerranée occidentale', in M. Bourin, F. Menant, and J. Drendel, eds., *La conjoncture de 1300 en Méditerranée occidentale* (Rome, 2004), pp. 9-33.

Brenner, R., 'The Low Countries in the transition to capitalism', *Journal of Agrarian Change*, 1, 2 (2001), pp. 169-241.

Buisman, J., *Duizend jaar weer, wind en water in de Lage Landen*, 5 vols. (Franeker, 1996).

Campbell, B.M.S., ‘Three centuries of English crops yields, 1211 1491’ (2007) http://www.cropyields.ac.uk (accessed on 5 Sep. 2015).

Campbell, B.M.S., ‘Nature as historical protagonist: environment and society in pre-industrial England’, *Economic History Review*, 63 (2010), pp. 281-314.

Chambers, R., ‘Vulnerability, Coping and Policy’, *Institute of Development Studies Bulletin*, 37, 4 (2006), pp. 33-40.

Corbett, J., ‘Famine and Household Coping Strategies’, *World Development*, 16, 9 (1988), pp. 1099-1112.

Crowley, J., Smyth, J. and Murphy, M, eds., *Atlas of the Great Irish Famine, 1845-52* (Cork, 2012).

Curtis, D., Dijkman, J., Vanhaute, E. and Lambrecht, T., ‘Famines in the Low Countries, fourteenth to nineteeth centuries’, in G. Alfani and C. Ó Gráda, eds., *Premodern famine in Europe, fourteenth to nineteenth centuries* (Cambridge, 2016).

Davies, M. and Kissock, J., ‘The feet of fines, the land market and the English agricultural crisis of 1315 to 1322’, *Journal of Historical Geography*, 30, 2 (2004), pp. 215–230.

De Keyser, P. and Van Loey, A., *Spiegel historiael* (Brussel, 1938).

Derville, A., ‘Le grenier des Pays-Bas médiévaux’, *Revue du Nord*, LXIX (1987), pp. 267-280.

Derville, A., *L'agriculture du Nord au Moyen Age: Artois, Cambrésis, Flandre Wallon* (Villeneuve-d'Asq, 1999).

Devereux, S., ‘Sen’s entitlement approach: critiques and counter-critiques’, *Oxford Development Studies*, 29, 3 (2001), pp. 245-263.

Devine, T. M., *The Great Highland Famine: Hunger, emigration and the Scottish Highlands in the nineteenth century* (Edinburgh: 1988).

Eddison, J., *Medieval pirates: Pirates, raiders and privateers, 1204-1453* (Stroud: 2013).

Ellis, F., ‘Household strategies and rural livelihood diversification’, *Journal of Development Studies*, 35, 1 (1998), pp. 1-38.

Franklin-Lyons, A., ‘Modern Famine Theory and the Study of Premodern Famines’, in P.B. i Monclús, ed., *Crisis alimentarias en la Edad Media. Modelos, explicaciones y representaciones* (Lleida, 2013), pp. 33-46.

Hanawalt, B., *Crime and conflict in English communities, 1300-1348* (Cambridge, 1979).

Hybel, N., 'The grain trade in Northern Europe before 1350', *Economic History Review*, LV (2002), pp. 219-247.

i Monclús, P.B., ‘De Labrousse a Sen. Modelos de causalidad y paradigmas interpretativos de las crisis alimentarias preindustriales’, in P.B. i Monclús, ed., *Crisis alimentarias en la Edad Media. Modelos, explicaciones y representaciones* (Lleida, 2013), pp. 15-32.

Johnstone, H., *Annales Gandanses: Annals of Ghent* (Oxford: 1985).

Jordan, W.C., *The Great Famine: Northern Europe in the early fourteenth century* (Princeton, 1996).

Kershaw, I., ‘The Great Famine and agrarian crisis in England 1315-1322’, *Past and Present*, 59 (1973), pp. 3-50.

Kirkland, T.M., Kemp, R.J., Hunter, L.M. and Twine, W.M., ‘Toward improved understanding of food security’, *Food, Culture & Society*, 16, 1 (2013), pp. 65-84.

Kitsikopoulos, H., ‘Standards of living and capital formation in pre-plague England: a peasant budget model’, *Economic History Review*, LIII (2000), pp. 237-261.

Kurt, G., ed., *La Chronique du Jean de Hocsem* (Brussel, 1927).

Lucas, H., ‘The Great European Famine of 1315, 1316, and 1317’, *Speculum*, 5 (1930), pp. 343-377.

Mate, M., ‘High prices in early fourteenth-century England: Causes and consequences', *Economic History Review*, 2nd ser., XXVIII (1975), pp. 1-16.

Maxwell, D. and Wiebe, K., ‘Land tenure and food security: exploring dynamic linkages’, *Development and Change*, 30 (1999), pp. 825-849.

Mertens, J., ‘De economische en sociale toestand van de opstandelingen uit het Brugse Vrije, wier goederen na de slag bij Cassel (1328) verbeurd verklaard werden’, *Revue belge de philologie et d'histoire*, 47, 4 (1969), pp. 1131-1153.

Palermo, L., *Sviluppo economico e società preindustriali. Cicli, strutture e congiunture in Europa dal Medioevo alla prima età moderna* (Rome 2001).

Postan, M. M. and Titow, J., ‘Heriots and prices on Winchester manors’, *Economic History Review*, 2nd ser., XI (1959), pp. 392-411.

Prevenier, W., ‘Motieven voor leliaardsgezindheid in Vlaanderen in de periode 1297-1305’, *de Leiegouw*, 19 (1977), pp. 273-288.

Prevenier, W., ‘Leliaards en Klauwaards vóór en na 1302. Loyaliteit, collaboratie en opportunisme’, in P. Trio, D. Heirbaut, and D. van den Auweele, eds., *Omtrent 1302* (Leuven, 2002), pp. 137-160.

Schneider, E., ‘Evaluating the effectiveness of yield-raising strategies in medieval England: an econometric approach’, *University of Oxford Discussion Papers in Economic and Social History*, 90 (2011), pp. 1-49.

Schofield, P., ‘Approaches to Famine in Medieval England’, in P.B. i Monclús, ed., *Crisis alimentarias en la Edad Media. Modelos, explicaciones y representaciones* (Lleida, 2013), pp. 71-86.

Sen, A., ‘Famines as Failures of Exchange Entitlements’, *Economic and Political Weekly*, 11, 31/33 (1976), pp. 1273-1280.

Sen, A., *Poverty and famines: an essay on entitlement and deprivation* (Oxford, 1981).

Sharp, B., ‘Royal paternalism and the moral economy in the reign of Edward II: The response to the Great Famine.’, *Economic History Review*, 66, 2 (2013), pp. 628-647.

Sivéry, G., *L'économie du Royaume de France au siècle de Saint-Louis* (Lille, 1984).

Slavin, P., ‘Market failure during the Great Famine in England and Wales (1315–1317)’, *Past and Present*, 222 (2014), pp. 9-49.

Slavin, P. ‘Warfare and Ecological Destruction in Early Fourteenth-Century British Isles’, *Environmental History*, 19, 3 (2014), pp. 528-550.

Soens, T., *De rentmeesters van de graaf van Vlaanderen. Beheer en beheerders van het grafelijk domein in de late middeleeuwen* (Brussel, 2002).

Soens, T., 'Waterbeheer in een veranderende samenleving. Een ecologische, sociaal-economische en politiek-institutionele studie van de wateringen in het Vlaamse kustgebied tijdens de overgang van de middeleeuwen naar de moderne tijden. Testregio: het Brugse Vrije' (unpub. Ph.D. thesis, Universiteit Gent, 2006) .

Soens, T., *De spade in de dijk? Waterbeheer en rurale samenleving in de Vlaamse kustvlakte (1280-1580)* (Gent, 2009).

Spufford, P., *Money and its use in medieval Europe* (Cambridge, 1989).

Thoen, E., *Landbouwekonomie en bevolking in Vlaanderen gedurende de late Middeleeuwen en het begin van de Moderne Tijden. Testregio: de kasselrijen van Oudenaarde en Aalst* (Gent, 1988).

Thoen, E., 'The birth of the 'Flemish husbandry': agricultural technology in medieval Flanders', in G. Astill and J. Langdon, Eds., *Medieval Farming and Technology. The impact of agricultural change in Northwest Europe* (Leiden, 1997), pp. 69-88.

Thoen, E., ''Social agrosystems' as an economic concept to explain regional differences. An essay taking the former county of Flanders as an example (Middle Ages-19th century)', in B. Van Bavel and P. Hoppenbrouwers, eds., *Comparative Rural History of the North Sea Area*, V, *Landholding and land transfer in the North Sea area (late Middle Ages-19th century)* (Turnhout, 2004), pp. 47-66.

Thoen, E. and Soens, T., ‘The origins of leasehold in the former county of Flanders’, in B. Van Bavel and P. Schofield, eds., *Comparative Rural History of the North Sea Area*, X, *The development of leasehold in northwestern Europe c. 1200-1600* (Turnhout, 2008), pp. 31-56.

Thoen, E. and Soens, T., ‘The family or the farm: A Sophie's choice? The Late Medieval Crisis in Flanders’, in J. Drendel, ed., *Crisis in the later Middle Ages. Beyond the Postan-Duby paradigm* (Turnhout, 2015), pp. 195-224.

Tits-Dieuaide, M.-J., 'The Baltic grain trade and cereal prices in Flanders at the end of the Middle Ages', in W. Minchinton, ed., *The Baltic grain trade: five essays* (Exeter, 1985), pp. 11-20.

Van Bavel, B., ‘People and land: rural population developments and property structures in the Low Countries, c. 1300 - c. 1600’, *Continuity and Change*, 17, 1 (2002), pp. 9-37.

Van Bavel, B. and Hoppenbrouwers, P., ‘Landholding and land transfer in the North Sea area (late Middle Ages-19th century)’, in B. Van Bavel and P. Hoppenbrouwers, eds., *Comparative Rural History of the North Sea Area*, V, *Landholding and land transfer in the North Sea area (late Middle Ages-19th century)* (Turnhout, 2004), pp. 13-43.

Van Bavel, B., *Manors and Markets: Economy and Society in the Low Countries, 500-1600* (New York, 2010).

Van Bavel, B. and Thoen, E., ‘Rural history and the environment. A survey of the relationship between property rights, social structures and sustainability of land use’, in B. Van Bavel and E. Thoen, eds., *Rural History in Europe*, IX, *Rural Societies and Environments at Risk. Ecology, Property Rights and Social Organisation in Fragile Areas (Middle Ages-Twentieth Century)* (Turnhout, 2013), pp. 13-40.

Vanhaute, E., ‘From famine to food crisis. What history can teach us about local and global subsistence crises’, *The Journal of Peasant Studies*, 38, 1 (2011), pp. 47-65.

Van werveke, H., ‘La famine de l’an 1316 en Flandre et dans les régions voisines’, *Revue du Nord*, XLI, 1 (1959), pp. 5-14.

Verhulst, A., 'l’Intensification et la commercialisation de l'agriculture dans les Pays-Bas méridionaux au XIIIe siècle', in *La Belgique rurale du moyen-âge à nos jours: mélanges offerts a Jean-Jacques Hoebanx* (Brussel, 1985), pp. 89-100.

Vermeylen, S. and Van der Horst, D., ‘Beyond monetary valuation: understanding the social properties of property", in C. Pertsova, ed., *Ecological Economics Research Trends* (New York, 2007), pp. 171-186.

Vervaet, L., ‘Goederenbeheer in een veranderende samenleving. Het Sint-Janshospitaal van Brugge, ca. 1275 - ca. 1575’ (unpub. Ph.D. thesis, Universiteit Gent, 2014).

Wisner, B., *At risk: natural hazards, people's vulnerability, and disasters*, (New York, 2004).

Zhang, D., Lee, H., Wang, C., Li, B., Pei, Q., Zhang, J., and An, Y., 'The causality analysis of climate change and large-scale human crisis', *Proceedings of the National Academy of Sciences*, 108, 42 (2011), 17296-17301.