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Food Crisis in Fourteenth-Century Hungary: Indicators, Causes and Case Studies

Abstract: This paper provides an initial overview of the failed harvests, food shortages, and famines reported in fourteenth-century sources from the Kingdom of Hungary and also with some reference to the countries of the Hungarian crown. It examines what might have caused these crises and looks for signs of socioeconomic consequences. Following a discussion of the primary sources – including an overview of the terms which contemporary authors used and of the methodology of interpreting direct and indirect indicators – the paper proceeds with a survey of the potential causes of food shortages. These include both those fourteenth-century meteorological and climate-related events (e.g., weather extremes, floods, fires) and biological hazards (e.g., locusts invasions, plague/pestilence) which have been established for this period, as well as some significant social factors (e.g., feudal anarchy and wars). Finally, it discusses those years for which there are indications of bad harvests, food shortages, dearth, and famine as separate cases studies on the 1310s to the early 1320s, the late 1340s to the early 1350s, early to mid-1360s, (1373–)1374, 1381, and the early to mid-1390s. Those periods which experienced food shortages (e.g. the 1310s and 1374) show thought-provoking parallels with some of the food crises that occurred in central and western Europe during this same time.

Keywords: 14th-century Hungary, food shortages, weather, pestilence, pest invasions, social factors


1 Introduction

The most severe known medieval famine in Hungary was reported during and after the Great Mongol Invasion, in 1241–1243. However, famines, usually of unknown extent, were also mentioned sporadically in the eleventh and twelfth centuries and at other

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points in the thirteenth century.¹ The evidence for systematic research on this subject is significantly better, however, for the fourteenth and even more so for the fifteenth century. While the evidence for the fourteenth century is still somewhat limited, these contemporary reports – primarily included in legal documentation (charters) and partly in other source types (chronicles, letters, accounts) – are sufficient for a discussion of some of the trends over several years or the documentation of longer periods of difficulty and crisis in connection with the food supply.

Consequently, this paper seeks to provide the first systematic overview of documented food shortages, food supply problems, and related difficulties, crises in fourteenth-century Hungary and to discuss what may have contributed to these problems. Although compared to western Europe relatively few direct sources are available in fourteenth-century documentation concerning food shortages, dearth or famine, with a systematic investigation it is still possible to provide a first overview in this topic. The present overview also challenges the frequent assumption that medieval Hungary was not or marginally affected by the crises² which bore down on western Europe during this time.

In some cases, the historical accounts of problems with the food supply themselves suggest the main causes of bad harvests and food shortages. In other cases, it is possible to draw some conclusions based on the other evidence of environmental conditions of the time – namely natural weather- and climate-related (e.g., prevailing weather conditions, extreme events); geological (e.g., earthquakes); and biological hazards (e.g., pestilence and animal invasions). These natural factors combined with ongoing socioeconomic processes might have been responsible for the harvest conditions and following difficulties or even crises that sometimes lasted over several years.

This investigation discusses seven more significant cases of dearth and famine and some additional years of food-related difficulties in one or many areas of the country. The geographical focus is on medieval Hungary, but other countries of the Hungarian crown (i.e., the Croatian kingdoms) are also included when the sources mentioned these.

¹ See Andrea KISS, *Weather and weather-related environmental phenomena including natural hazards in medieval Hungary I: Documentary evidence on the 11th and 12th centuries*, in: *Medium Aevum Quotidianum* 66 (2013), pp. 5–37; ID., *Weather and weather-related natural hazards in medieval Hungary II: Documentary evidence on the 13th century*, in: *Medium Aevum Quotidianum* 68 (2014), pp. 5–46.

² Scholarly literature concerning medieval Hungary has generally hypothesized that no significant, large-scale dearth or famine developed in medieval Hungary due to the low population density and the abundant resources, including the huge amount of livestock. See, for example, Péter GUNST, *Hungersnöte und Agrarausfuhr im spätmittelalterlichen Ungarn (1700–1848)*, *Agrártörténeti Szemle* 26 (1984), pp. 11–18; Andrea FARA, *Crisi e carestia nell'Europa centro-orientale in epoca medievale. Alcune osservazioni*, in: Benito P. MONCLÚS (ed.), *Crisis alimentarias en la Edad Media. Modelos, explicaciones y representaciones*, Lleida 2013, pp. 251–281.

2 Reported Fourteenth-Century Bad Harvests, Food Supply Problems and Multiannual Crises³

2.1 Sources

In Hungary, charters are the most important source of information on the fourteenth century, although chronicles and other types of primary sources (e.g., private and official correspondence) also give some indication of food shortages, crises and their causes. Whereas charters are only sporadically available for the period before the thirteenth century and these few contain only basic information, a slow change can be detected afterwards, especially from the second half of the thirteenth century, when charters gradually became more detailed and frequent. A real boom of charter production, however, occurred from the early 1320s (see Figure 1), during the reign of King Charles (Robert) I (1301–1342). As a result, domestic charters have an overwhelming relevance in the study of fourteenth-century food shortages and their potential environmental and socio-economic causes. In addition, charters from outside of Hungary – either from the countries of the Hungarian crown (e.g., Slavonia, Dalmatia) or from the neighboring lands (e.g., Austria) – sometimes contain important information referring directly to the situation in Hungary, as well. Charters were issued for a variety of reasons, in a few cases also including appeals for a reductions of or exemption from certain tax types (e.g., for privileged population), but most charters were related to land transactions (e.g., selling land due to urgent need). The charter documents of the fourteenth century hardly represent all segments of the society: only those who possessed land (whether individuals or communities) appeared regularly, while charters rarely mention those without land (e.g., serfs).

A few narrative sources from the fourteenth century contain food shortage-, weather- or crisis-related information. Apart from the short but important references in the contemporary chronicle of János Küküllei, which, generally, without mentioning dates, reflect on the main natural hazards, famines, and their (primarily weather-related) causes during the reign of King Louis I (1342–1382), there is no other information relevant to this study in contemporary domestic narratives. Other primary sources, however, such as the accounts of the pope's tithe collector, as well as the correspondence of Italian ambassadors or spies in the Hungarian court, may contain useful information about the situation in the country as a whole, mainly for the second half of the century, during the reign of Louis I, Queen Maria (1382–1387) and then King Sigismund (1387–1437).

³ For a recent, detailed discussion of the subject, see also: Andrea KISS/ Ferenc PITI/ Ferenc SEBŐK, *Rossz termések, élelmiszerhiány, drágaság, (éh)ínség és okaik a 14. századi Magyarországon* (Bad harvests, food shortage, high prices, dearth, famine and their causes in 14th century Hungary), in: *Magyar Gazdaságtörténeti Évkönyv* (2016), pp. 23–79. Whereas the paper cited contains a detailed discussion of individual sources and cases, the current paper presents an overview of the main results and further analysis of the subject.

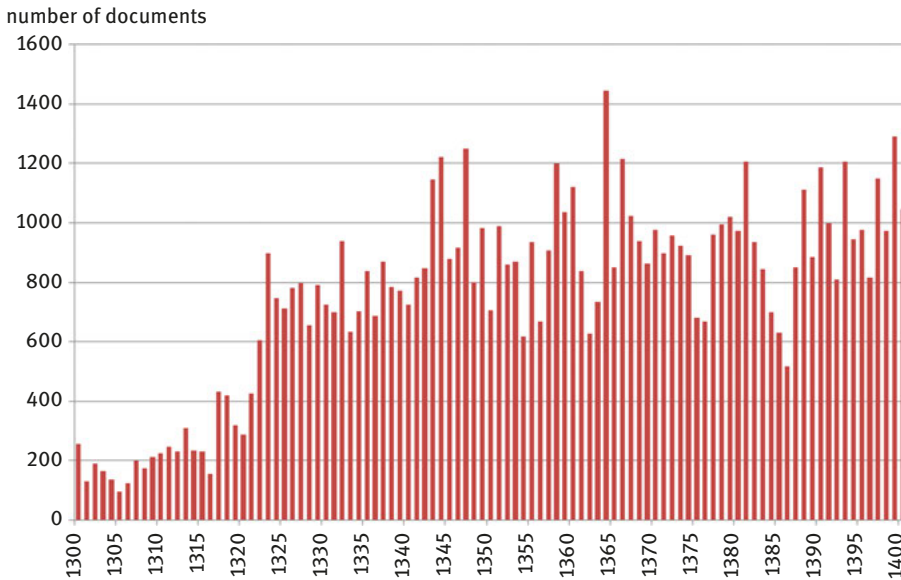


Figure 1: Number of documents per year for the 14th century, available in the Hungarian National Archives (source of data: hungaricana.hu). The great boom of documentation from the 1320s is primarily related to the increase in charters.

2.2 Terminology

Most of the source material for this study was written in Latin, but there are also sporadic cases of German and Italian – mainly in correspondence. Depending on the magnitude of food shortages and crises, the authors of the accounts in Latin used different terms, providing a useful tool for the interpretation of the severity (Figure 2a) and temporal distribution (Figure 2b) of the events described. In general, the terms themselves do not provide unambiguous information on the severity of the food shortages, difficulties, or crises described; each account must be interpreted individually. Nevertheless, even this approximate categorization can contribute – with a few caveats – to the overall interpretation.

As for food shortage problems and their severity, very little evidence is available to document the situation in fourteenth-century Hungary. The definition and meaning – based on the cases known – are seemingly not very different from (western) European interpretations⁴: *fames* (or even, *fames valida*), namely “famine,” was the most severe level that appeared only twice in this century: first, prior to 1318 (1316–1317(?)) in reports from both the eastern and the western parts of the country, and then around 1348,

⁴ See, for example: Fritz CURSCHMANN, *Hungersnöte im Mittelalter. Ein Beitrag zur deutschen Wirtschaftsgeschichte des 8. bis 13. Jahrhunderts* (Leipziger Studien aus dem Gebiet der Geschichte 6/1), Leipzig 1900, pp. 10–11; William Ch. JORDAN, *The Great Famine*. Princeton 1996, p. 11.

presumably mentioned in the west. The account of the famine prior to spring 1318 also uses the term *inedia* (“starvation”). The mid- to late-fourteenth-century chronicler, János Küküllei, also reported on famines (*fames diversis temporibus*) during the reign of King Louis the Great, albeit without giving exact dates. Küküllei blamed the food shortage on locusts and mice which had eaten the grains and other crops, but he also listed droughts and fickle or stormy weather conditions (*aeris tempestates*) among the reasons.⁵

Caristia or *magna caristia* (e.g., 1364 and 1374) may appear both in the sense of high prices and dearth.⁶ A clear reference to lack of food (of unknown severity) is *defectum victualium*; this term was used in 1321.⁷ More frequently applied terms for need and shortage are *penuria*, *inopia*, and *necessitas*, whereas a more general term is *paupertas* (poverty, see Figure 2a and 2b). These last terms, often mentioned together, may not necessarily refer to a more general crisis in the area or the country itself when used in reference to individual people or families, but the severe need or poverty of communities belonging to the lower landowner classes – especially those forced to rely on the charitable institutions or had charity missions such as monasteries – may indicate a more significant long-term subsistence crisis. These segments of society were often more prone to the negative effects of a stress or crisis, meaning that their urgent need was recorded more often, and may serve as an indicator of more general, larger-scale problems.⁸ Consequently, this study also interprets references to urgent needs and shortages within urban, religious, and noble communities as indicators of general difficulties in a given period.

In our present investigation, the references to *fames* and *caristia*, which suggest a more serious lack of food, are applied as direct, primary crisis indicators. The more indirect cases (third and lowest group on Figure 2a), when the terms for “need” are used in describing serious, likely multi-annual problems facing entire communities (and not only individuals!), are listed among the terms referring to difficulties that might have also been related to food supply and other problems, with the caveat that single cases alone may

⁵ Matthias FLORIANUS, *Chronica Dubniciense cum codicibus Sambuci Acephalo et Vaticano, cronicisque Vindobonensi picto et Budensi accurate collatum* (Historiae hungaricae fontes domestici I/3.), Leipzig 1884, p. 191.

⁶ There are extant documents that report on the great drought and dearth of 1507 to 1508, almost two centuries later, both in Latin and Hungarian: in this case the contemporary Latin sources use the term *maxima caristia*, while the Hungarian source characterized the dearth – dated by the author to 1508 – as a time of “unspeakably high/great prices” (*mondhatatlan nagy drágaság*). For more information see, for example: Andrea KISS/ Zrinka NIKOLIĆ, Droughts, dry spells and low water levels in medieval Hungary (and Croatia) I. The great droughts of 1362, 1474, 1479, 1494 and 1507, in: *Journal of Environmental Geography* 8/1–2 (2015), pp. 11–22, here p. 19.

⁷ Hungarian National Archives, Collection of medieval documents (hereafter HNA, DL/DF), DF 209129.

⁸ The documentation on difficulties of monastic communities was suggested and used as an indicator of crisis by JORDAN (note 4), pp. 65–72, 76. Although he referred mainly to monastic communities in the context of discussing the difficulties of lower landowner classes, other privileged communities in somewhat similar situation may have also reacted more sensitively during the difficult years. We therefore collected and applied these other examples (e.g., urban, guest, noble communities) as well in the present investigation.

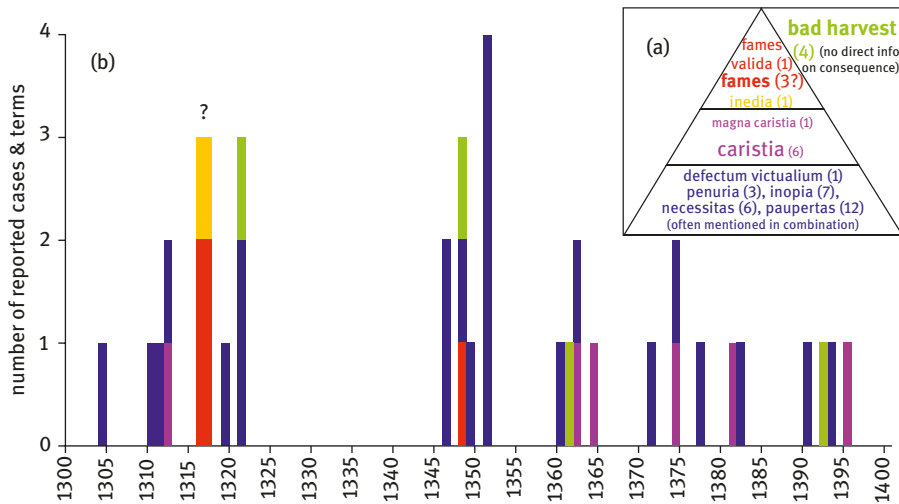


Figure 2: Applied Latin terminology for a) the severity of food shortage with the number of references; and b) the temporal distribution of the terms mentioned in contemporary documentation. Severity of terms in blue is often unknown (based on the evidence included in the present paper).

not necessarily indicate a significant regional crisis. Beyond the evidence referring to food shortages, references to failed harvests – typically to a bad grain or grape crop, but sometimes also to hay and other products – provide further evidence of food production and supply problems, even in those cases when no information directly suggests that serious food shortage problems would have followed one single failed harvest (see Figure 2b).

Based on the temporal distribution of the applied terminology (Figure 2b), the first known crisis period lasted from the 1310s into the early 1320s, with three marked sub-periods, namely the early 1310s (before and around 1312), a clearly severe period before spring 1318 (probably the years 1316 to 1317), and a probable additional shortage (of unknown severity) around the year 1321. The next period of more significant difficulties lasted from 1346 to 1351, followed by further food-supply problems in 1361 to 1362 and 1364. Other, isolated references, mainly to dearth, occasionally to poor harvests, are extant around 1373 to 1374, 1381, the early and mid-1390s.

2.3 What May Indirect Indicators Tell us About Fourteenth-Century Food Crises?

As outlined in the terminology section above, the words applied to describe certain level of difficulties are sometimes direct indicators (see Figure 2a). Other evidence, mentioned here as potential, indirect indicators (including the terms for “need” described above), may provide further useful information in detecting periods of more significant food shortage or general crisis (Figure 3). Documentation of tax

reductions, migration issues, social conflicts (e.g., social unrest or rebellion, conflicts between nations for better representation within town administration) or currency devaluation may further extend our possibilities of detecting years with difficulties or crises that might be significantly connected to food shortage in some or large parts of the country. Whereas tax reductions are more strongly related to food shortage problems, (im)migration issues, social conflicts, and, especially, currency depreciation (devaluation of the denar) may be indirect signs of more general problems.

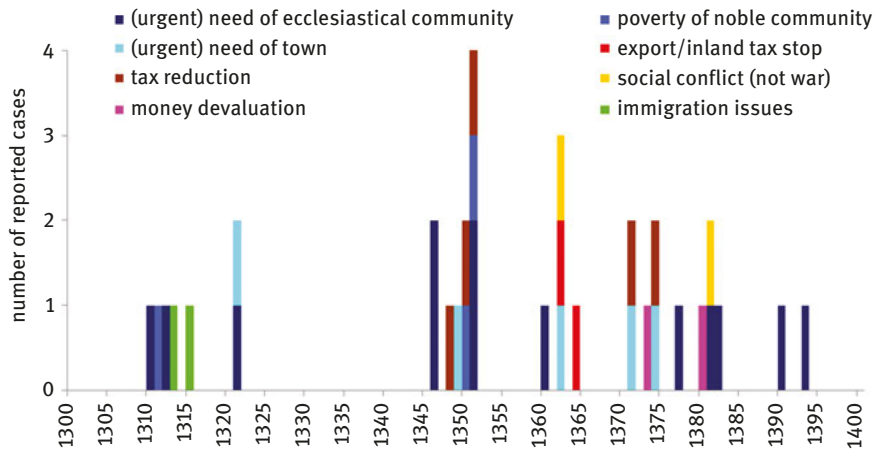


Figure 3: Indirect indicators of difficulties and/or crises in 14th-century sources (based on the evidence discussed in the present paper).

Similar to the crisis periods previously defined based on the frequency and severity of the applied terms for describing the level of food shortage problems (Figure 2), the key periods, when these indirect indicators were applied, are the early and mid-1310s with 1321, 1346–1351, 1362 and 1364, 1374 and the early 1380s.

3 Some Potential Causes: Weather-Related and Biological Factors

3.1 Weather-Related Information

Weather reports are only sporadically available for the fourteenth century.⁹ Among these reports usually the ones on severe winter conditions, early and late frosts,

⁹ Andrea Kiss, *Weather and weather-related natural hazards in medieval Hungary III: Documentary evidence on the 14th century*, *Medium Aevum Quotidianum* 73 (2016), pp. 5–55.

convective events (e. g. thunderstorm, hail) and dry conditions may have the most relevance while discussing the potential weather-related reasons for bad harvest results in a given year. In our, fourteenth-century case no direct reference is available for convective events (Figure 4). Individual records on flooding may also refer back – albeit indirectly – to the preceding weather conditions leading up to the flood, and a higher frequency of reported flood events is often connected to periods of increased amount and/or intensity of precipitation.¹⁰

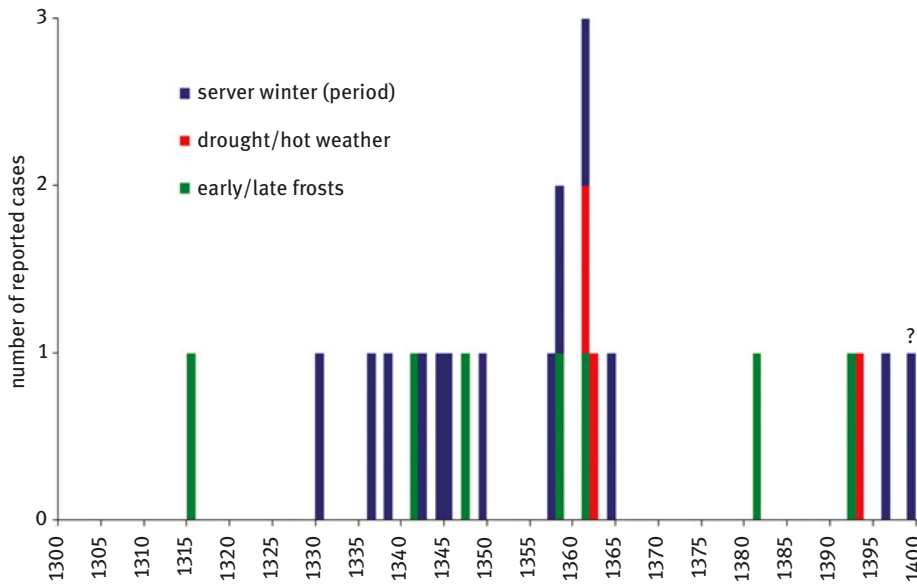


Figure 4: Contemporary evidence on weather extremes available for 14th-century Hungary.¹¹

The quantity of documentary sources allows for some conclusions regarding weather and flooding from the early 1320s onwards. While references to the weather in charters are rare, in some cases there are indications of early or late frosts (and/or unusually early, late, or deep snow), references to severe winter conditions and droughts (and/or hot weather), and other conditions potentially harmful to the harvest. Out of the early/late frost cases the ones in or around 1347 and 1392 were directly connected in the documentation with negative effects on (vine) harvests. As for reported hard weather conditions observed in winter, the 1340s, for which there are somewhat more related reports, stand out. In two further cases (early 1362, 1393?) drought and/or hot weather conditions might have also affected the harvest.

¹⁰ See, for example, Andrea Kiss, *Floods and long-term water-level changes in medieval Hungary*, Cham 2019.

¹¹ Source of data: Kiss (notes 9, 10), and the evidence provided in the present paper.

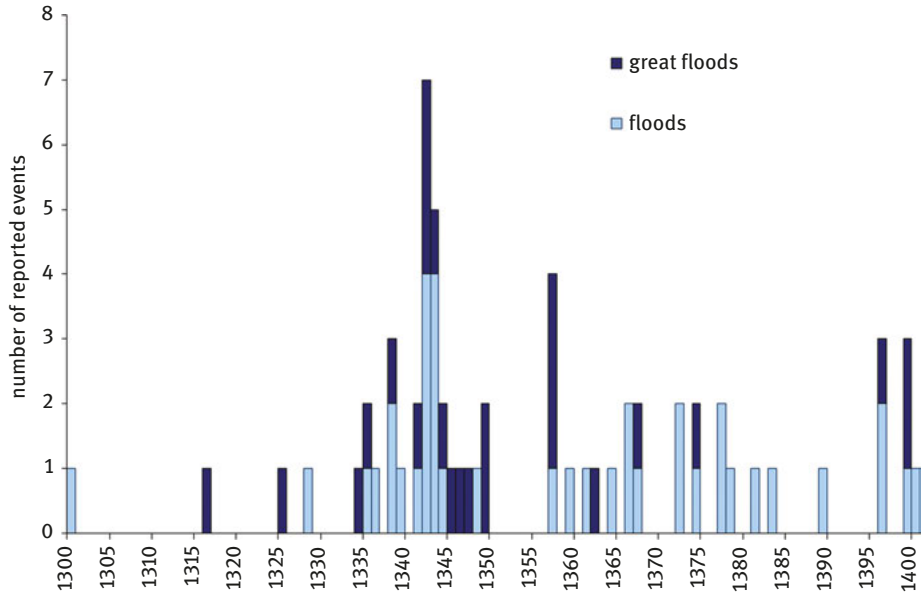


Figure 5: Individually documented flood events in 14th-century Hungary, dividing notable and great (including extraordinary) floods.¹²

As presented in Figure 5, concerning floods the charters reveal a rather exceptional period with a high number of recorded floods from the mid-1330s to the late 1340s; somewhat more floods are known again from the mid-late 1350s. Another period with more frequent and intense flooding may have started from the late 1390s and continued into the early fifteenth century.¹³ The particularly outstanding years are 1342 and 1343, but rather significant flooding seems to have occurred in 1338, 1396, and 1399 as well, especially if past and/or frequent flood reports are considered in addition to the reports of current flooding. Figure 5 tallies only the individual reports of ongoing flood events, but sometimes charters also referred to past floods and frequent flooding (i.e., multi-annual flood reports): apart from one case in 1309, numerous such reports are extant for the late 1330s, the 1340s, the late 1350s, while two cases are also available in the early/mid-1360s and 1390s, respectively.¹⁴

¹² Source: Kiss (note 10).

¹³ Andrea Kiss, *Árvizek és magas vízszintek a 13–15. századi Magyarországon az egykorú írott források tükrében: Megfoghatók-e és mi alapján foghatók meg rövid, közép és hosszú távú változások? (Floods and high waterlevels in Hungary during the 13th-15th century in light of written sources: Is it possible to detect changes over the short, medium, and long term, and in what way?)*, in: Miklós KÁZMÉR (ed.), *Környezettörténet 2 (Environmental history 2)*, Budapest 2011, pp. 43–55. See also: Kiss 2018 (note 10).

¹⁴ Kiss (note 10).

The scarcity of reports of extreme weather and flooding themselves do not allow for direct conclusions on possible connections of weather conditions with food supply problems. Nonetheless, combining these data with the conditions reported in neighboring areas, it is possible to establish some potential connections in the individual cases.

3.2 Epidemics (plague) and Locust Invasions

Contemporary evidence is available for two further factors that might have negatively affected harvests and agriculture in general: locust invasions and epidemics (plague). As briefly mentioned above, Küküllei blamed famines during the reign of King Louis I on locusts and mice that ate the harvests. We have no other contemporary source mentioning any invasion of mice, but contemporary sources from central Europe and northern Italy include documentation of locust invasions, which spread from Hungary towards the west and southwest. Küküllei also mentioned epidemics, but his brief account makes no connection between famines and epidemics, instead blaming the famines and bad grain harvests on fickle weather, droughts, and these locust and mouse invasions.¹⁵

Figure 6 shows the references to epidemics in contemporary sources, as well as reports of locust invasion. In case of two, great locust invasions, namely for the ones in 1338 to 1341 and in 1363(-1366?), (foreign) contemporary sources refer to locust invasions in or coming from Hungary or from the direction of the Carpathian Basin. The great 1338–1341 invasion was also reported under the years 1340–1342 in the fifteenth-century Dubnic chronicle and the chronicle of János Thuróczy (Hungarian Illuminated Chronicle versions), while the similarly fifteenth-century Georgenberger Chronik dated this locust invasion for 1338.¹⁶ Other years, classified here as “possible locust invasions,” were when sources from northern Italy and Austria mention locust invasions in the same and/or subsequent year(s). In these cases, such as the invasions in 1309 and 1310, the rest of the years in the mid-1360s, and the possible invasion years of 1314, 1346–1347, the route of locusts also had to lead through the Carpathian Basin before reaching the eastern parts of Austria, northern Italy, and the Czech lands.¹⁷

¹⁵ FLORIANUS (note 5), p. 191.

¹⁶ Imre SZENTPÉTERY, *Scriptores rerum Hungaricarum. Tempore ducum regumque stirpis Arpadianae gestarum*, vol. 2, Budapest 1999, p. 284; FLORIANUS (note 5), p. 129; Erzsebet GALÁNTAI/ Gyula KRISTÓ, *Johannes de Thurocz, Chronica Hungarorum*, Budapest 1985, p. 154.

¹⁷ Pierre ALEXANDRE, *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, pp. 432–433, 493–500; Dario CAMUFFO/ Silvia ENZI, *Invasioni di cavallette e fattori climatici dal medioevo al 1800*, in: *Bollettino Geofisico* 14/2 (1991), pp. 26–27, 31; Christian ROHR, *Extreme Naturereignisse*

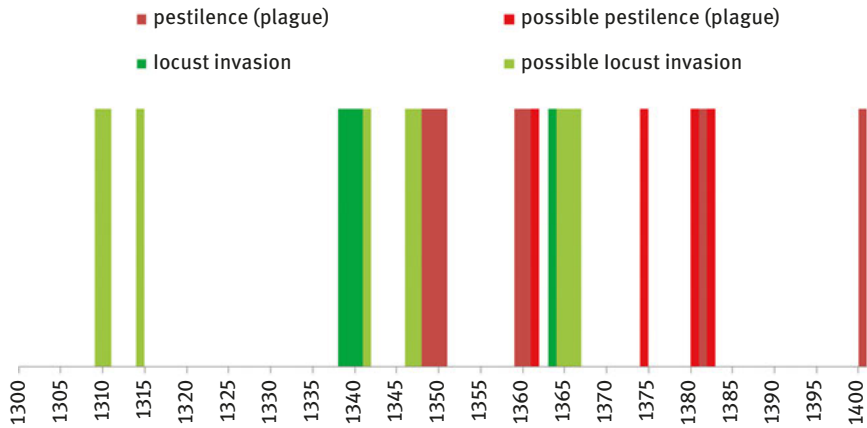


Figure 6: Documented epidemics and locust invasions in 14th-century Hungary. Invasions are classified as possible when no source refers directly to Hungary, but are assumed based on invasions reported in nearby regions during this period (e.g., Austria, northern Italy, Czech lands) where locusts usually arrive from the Carpathian Basin (based on the cases discussed in the present paper).

As previous studies have shown,¹⁸ locusts in Austria were only destructive in a narrow zone along the track of their invasion, while areas further from their path remained practically untouched. As a result, no considerable, large-scale food shortage developed. Historical records up into the modern era suggest that the situation was different in large parts of Hungary and the Carpathian Basin. Here locusts arrived from the east, southeast, and remained over the course of several (often four to five) years in different parts of the Carpathian Basin, especially in the lowlands and larger basins in the south and east, such as central Transylvania and the southern and central parts of the Great Hungarian Plain. Locusts nested (laid eggs) over extensive areas, and the young locust larvae caused immense damage to the crops in these areas even before they were able to fly. Furthermore, local multi-annual outbreaks (even in the western part of the country) were also reported in the early modern period.¹⁹ Still, despite the documentation available, no detailed investigations have thus far been carried out to clarify the role of locust invasions in cases of rising food prices, dearth, or even famine in the country as a whole. It is clear, however, that not

im Ostalpenraum. Naturerfahrung im Spätmittelalter und am Beginn der Neuzeit, Köln, Weimar, Wien 2007, pp. 467–468, 474. Long-term overview concerning Hungary: Andrea KISS, A sáskajárások néhány területi és tájtörténeti vonatkozása a Kárpát-medencében (Regional and landscape historical consequences of locust invasions in the Carpathian Basin), in: György FÜLEKY (ed.), *A táj változásai a Kárpát-medencében. Történeti emlékek a tájban* (Landscape changes in the Carpathian Basin. Historical memories in the landscape), Gödöllő 2012, pp. 123–132. See also: KISS (note 9).

¹⁸ ROHR (note 17), p. 492.

¹⁹ For the latest, 800-year overview of locust invasions in Hungary based on documentary evidence, see: KISS (note 17).

the entire Carpathian Basin was severely affected even during the most intense early modern invasions: for example, in the mountainous areas in the north and the westernmost parts of the country, these invasions followed a somewhat similar pattern as described above in Austria.

Another, even more significant factor mentioned in these sources is the incidence of epidemics (represented in Figure 6), which most probably meant plague in most cases throughout the fourteenth century: 1348–1350, 1359–1360(–1361), 1374(?), (1380–)1381(–1382), and 1400.²⁰ Even though the documentation allows us to identify these years as periods of plague, the gap between the early 1380s and 1400 probably means that the list is not yet complete.

Although not included in Figure 6, the cattle plague (and related loss of domestic animals) that widely affected Europe, including east central Europe, in the 1310s and early 1320s are an important further question to consider.²¹ There are no extant contemporary (or near-contemporary) domestic reports about the cattle plague in Hungary, but a seventeenth-century chronicle by Caspar Hain suggests that a great many cattle died in the years around 1312.²² Moreover, a cattle plague was reported in neighboring countries such as Austria in 1308 and the Czech lands in 1314 and 1316; it can be assumed that this cattle plague affected Hungary, as well. A similar report is known in Poland as early as 1298,²³ and, by 1317 at the latest, there are reports of cattle plague in northern Italy.²⁴ Two Russian chronicles mention a cattle plague in 1298 and 1309, and two Persian authors report a high cattle mortality during the reign of the Golden Horde ruler, Tohtu Khan (1291–1312),²⁵ so it seems that the cattle plague was present in the Golden Horde areas, east of Hungary, too.

For most of the cases in Figure 6 in which human epidemics were reported (1348–1351, 1359–1360, 1374 and 1381), there are simultaneous or, in the early 1360s, following references to food supply problems, need, shortages, or dearth. Furthermore, there are approximate, possible overlaps in the late 1300s-early 1310s, around 1346–1347

20 Jean-Noël BIRABEN, *Les hommes et la peste en France et dans les pays européens et méditerranéens*, vol. 2. The Hague 1976, pp. 439–440; his references are revised and extended in the present study on the separate case studies.

21 See, for example: Timothy P. NEWFIELD, A cattle panzootic in early fourteenth-century Europe, in: *Agricultural History Review* 57 (2009), pp. 155–190.

22 Jeromos BAL/ Jenő FÖRSTER/ Aurél KAUFFMAN, Hain Gáspár lócsei krónikája (The chronicle of Leutscha/Levoča by Caspar Hain), *Lócse [Levoča] 1910–1913*, p.12.

23 NEWFIELD (note 21), pp. 160–161. It is also interesting that NEWFIELD, for example, divided this particularly severe and long-term cattle plague chronologically and geographically into two periods and regions: whereas the disease was the hardest in eastern and central Europe between 1290 and 1310, the gravest reports from western and Europe are dated between 1315 and 1325. In both cases, however, central Europe was included among the affected regions.

24 Martin BAUCH, Jammer und Not. Karl IV. und die natürlichen Rahmenbedingungen des 14. Jahrhunderts, in: *Český Časopis Historický* 115/4 (2017), S. 983–1016.

25 NEWFIELD (note 21), p. 161.

and in the early to mid-1360s between (potential) locust invasions and food shortage or general difficulties. For the years around and after the great locust invasion of the late 1330s to early 1340s, there is no known reference in the contemporary sources to food shortages. Nevertheless, as suggested above, there is an uptick in reports of general distress in the second half of the 1340s, and in some areas even reports of more severe food shortage problems, too.

4 Bad Harvest, Food Shortage, High Prices, Dearth, and Famine: Case Studies

4.1 The triple(?) crisis of the 1310s and early 1320s: (1310–)1312, prior to spring 1318, and circa 1321

4.1.1 The Difficulties and Dearth of (1310–)1312

The first two decades of the fourteenth century were characterized by feudal anarchy and a civil war between the king(s) and opposing oligarchs. For the first decade of the century, the only direct report of general social stress is one of great poverty (associated with the war); this report came from Dalmatia and was dated to 1304.²⁶ Clearer reports on crisis and food supply problems are available from the second decade of the century; the first periods in which there are direct signs of a general and/or food-related crisis come around 1312 and prior to 1318.²⁷

²⁶ Mentioned as “Sclavonia” in 1304; see: Ivan K. TKALČIĆ, *Monumenta Ragusina. Libri reformationum* vol. 2. (*Monumenta spectantia historiam Slavorum meridionalium* 13), Zagreb 1882, p. 306.

²⁷ For earlier studies that have already briefly addressed this problem, see: Andrea KISS, Some weather events in the fourteenth century II. (Angevin period: 1301–1387), in: *Acta Climatologica Universitatis Szegediensis* 32/33 (1999), pp. 51–64. Discussing more extensively, concentrating on the (probable) crisis of the (early-)mid 1310s: Richárd SZÁNTÓ, *Természeti katasztrófa és éhínség 1315–1317-ben* (Natural catastrophe and famine 1315–1317), in: *Világtörténet* 1 (2005), pp. 50–64. András VADAS, Documentary evidence on weather conditions and a possible crisis in 1315–1317: Case study from the Carpathian Basin, in: *Journal of Environmental Geography* 2/3–4 (2009), pp. 23–29. Whereas SZÁNTÓ, based on the earlier study, took into consideration the 1312 reference to dearth, VADAS also referred to one of the (great) famine mentions (the Keserű case) prior to spring 1318. A contribution of fundamental importance to the landscape of edited source material is being made by an ongoing, multi-decadal project started in the early 1990s; this regesta-collection program of the Anjou-kori Oklevéltár (led by Gyula KRISTÓ) series is systematically cataloging known charters (providing detailed regesta of each charter) concerning the Angevin period in Hungary between 1301 and 1387. The volumes published so far cover the years between 1301–1364.

In June 1312, the high prices or dearth (*caristia*) of the current year forced a local nobleman for selling lands in the north (Chanta and Petenye, today Čenčice in Slovakia), in the western part of the medieval Szepes county (see Figure 7).²⁸ There are some indirect indicators of social distress in 1310, when the Carthausians in the same county received the tithe incomes of a village from the Szepes provost due to their destitution.²⁹ The difficult situation might have resulted at least in part from the harassment the monastery had suffered in the preceding years. Interestingly, the nobles in this same county were also in dire straits in February 1311; at least they referred to their poverty and need when asked for and received a reconfirmation of their rights and privileges from the Palatine, Amadé Aba.³⁰ Finally, on July 25, 1312, the Dominican monastery on Rabbit Island (today Margaret Island in Budapest), undoubtedly one of the country's richest nunneries, declared that in their great poverty and need of "everyday things", they had had to sell one of their landed properties in Baranya county.³¹ It is also an interesting fact that the seventeenth-century chronicle of Caspar Hain, compiled on the basis of some long-lost local medieval sources, reports on a three-year period of great hunger or even starvation and famine (*Hunger*), combined with the loss of cattle mentioned above. He dated the event to around the time of the great battle of Rozgony (today Rozhanovce in Slovakia), between the king and chief oligarchs that took place on June 15, 1312 in the neighboring Abaúj county.³²

There are also reports of towns burning during this same year of 1312, for example, the royal town of Sopron in the west (reason unrecorded) and the episcopal town of Nitra in the north, which was burnt down in summer by the oligarch, Máté Csák. All these problems in the year of 1312 in Hungary is particularly interesting in the light of central European events: harvests were rather bad with dearth and famine in this year, due to great heat and drought both in the Czech lands, Austria and Bavaria.³³

28 László BÁRTFAI SZABÓ, *Oklevéltár a gróf Csáky család történetéhez. I. kötet. Oklevelek 1229–1499* (Cartulary of the history of the count Csáky family, vol. 1: Charters 1229–1499), Budapest 1919, p. 90.

29 Georgius FEJÉR, *Codex diplomaticus Hungariae ecclesiasticus ac civilis*, vol. 8/1, Buda 1832, pp. 388–389.

30 HNA, DL 39640. Amadé Palatine (1240?–1311) from the Aba family was one of the leading oligarchs of the country in the late thirteenth and early fourteenth centuries: several counties (including Szepes) in medieval Hungary – covering the areas of the present-day eastern Slovakia, northeastern Hungary, and the Transcarpathian region in the Ukraine – belonged to his jurisdiction, and practically formed a separate province within the Kingdom of Hungary. See e.g. Attila ZSOLDOS, *Király, oligarchák, tartományurak* (The king and the oligarchs), in: *História* 34/4 (2012), pp. 3–6.

31 HNA, DL 40341.

32 BAL/ FÖRSTER/ KAUFFMAN (note 22), p. 12.

33 For sources and discussion of this and other (town) fires of the century, see: KISS (note 9). Central European parallels: Rudolf BRÁZDIL/ Oldřich KOTYZA, *History of Weather and Climate in the Czech Lands I: Period 1000–1500*, Zürich 1995, p. 111; ALEXANDRE (note 17), p. 435; CURSCHMANN (note 4) p. 207.

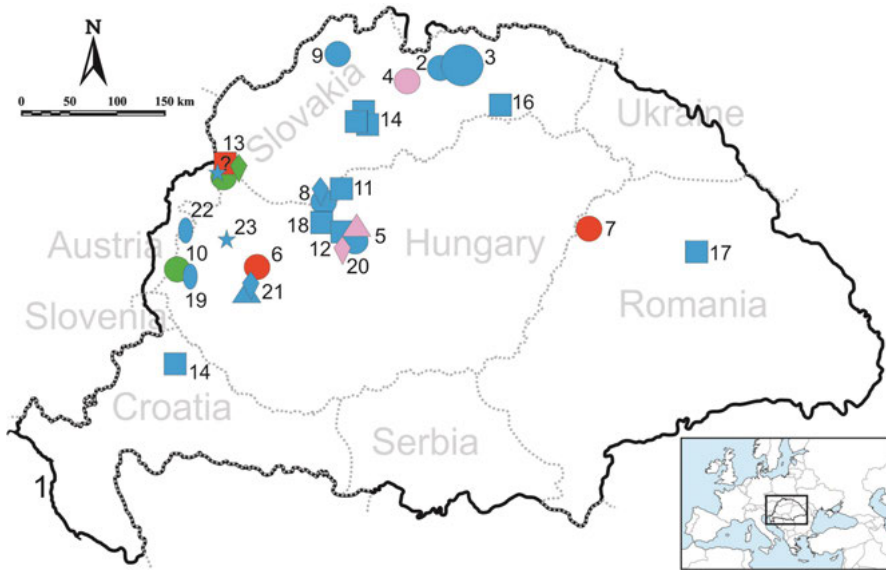


Figure 7: Locations of reported famine/starvation (red), dearth/high prices (pink) and need/food shortage, poverty (blue), bad harvest (green) cases in the 1310s to early 1320s (circle) and the late 1340s to early 1350s (rectangle), early 1360s (oval), 1370s (star), 1381–1382 (triangle), 1390s (trapezoid) in the countries of the Hungarian crown, referred in the present paper (grey: present-day countries; dotted lines: present-day country borders). Location numbers (with present-day names and countries): 1=Dalmatia (Hr), 2=Menedékkő/Lapis Refugium (Letanovce-Sk), 3=Szepesség (Spiš region-Sk), 4=Peténye/Chanta (Čenčice-Sk), 5=Rabbit/Margaret Island (Budapest-H), 6=Szőlős (Veszprém-H), 7=(Ér)Keserű (Cheşereu-Ro), 8=Esztergom (H), 9=Zsolna (Žilina-Sk), 10=Ják (H), 11=Zebegény (H), 12=Budafelhévíz (Budapest-H), 13=Pozsony (Bratislava-Sk), 14=Kapronca (Koprivnica-Hr), 15=Dobronya, Németspelsőc, Bâbaszék (Dobrá Niva, Plešivec, Babiná-Sk), 16=Szepsi (Moldava nad Bodvou-Sk), 17=Dés(vár) (Dej-Ro), 18=Pilis (H), 19=Vasvár (H), 20=Buda (Budapest-H), 21=Tihany (H), 22=Máriahegy (Klostermarienber-A), 23=Pápóc (H).

The many difficulties, combined with and at least partly caused by constant civil war, might have been the reason for the negative response to the hungry migrants coming from Alsace around 1313 that Johann von Winterthur mentions in his chronicle.³⁴ Neither Winterthur nor other chroniclers tell how the populace responded to other migrant groups including the refugees who fled to east central Europe as a result of conflicts in Lotharingia/Lorraine and other areas of the German Empire in the mid-1310s; according to a contemporary source, these migrants made their living by begging.³⁵

³⁴ *Chronica Iohannis Vitodurani*, ed. Friedrich BAETHGEN (MGH *Scriptores rerum Germanicarum*. Nova series 3), Berlin 1924, p. 76.

³⁵ Josef ZAHN (ed.), *Anonymi Leobicensis Chronicon*, Grätz 1865, pp. 32–33.

4.1.2 The (great) Famine Prior to Spring 1318

In two different parts of the country, sources include reports of a long-term famine in the period prior to spring 1318 (before March and April). In the eastern part of the Great Hungarian Plain, in (Ér)Keserű (today Cheşereu in Romania) the great famine (*fames valida*), was mentioned in the context of a land purchase between close relatives: a widow who sold her land to her brother referred to past “time of the great famine” as a period that had passed by 20 April which is the date on the charter confirming the sale. The second involves a charter (issued on 19 March) from Central Transdanubia (western Hungary) which listed “unpeaceful times,” starvation, and famine (*inedia, fames*) – when the bishop provided food and protection – as the reasons why the nobles of (Veszprém)Szóllós were subordinating themselves to the lordship of the bishop of Veszprém.³⁶ The considerable geographical distance³⁷ between the two (great) famine and starvation reports and the generalized references may suggest that large parts of the country were affected by these difficulties.

Taking into consideration the contemporary military operations and political struggles³⁸, the bad harvests caused by unfavorable weather in the neighboring countries (i.e., the Czech lands, Austria), the following food shortage problems in the East Central European region and, to some extent, the great floods and extraordinary rainfall that affected Austria and at least parts of western Hungary, it seems likely that the famine took place around 1316 and 1317 in Hungary, but it may have started somewhat earlier. The particular phrasing and terms used to describe the graveness of the problems in this case deserve especial emphasis: such expressions had not been seen since the great famine of the First or Great Mongol Invasion, in 1241 to 1243.³⁹

³⁶ Imre NAGY/ Dezső VÉGHELY/ Gyula NAGY, *Zala vármegye története. Oklevéltár. 1. kötet (History of Zala county: Cartulary vol. 1)*, Budapest 1886, pp. 146–147. HNA, DL 50333.

³⁷ Aerial distance: 322 km.

³⁸ Amongst others, see: Pál ENGEL, *Az ország újraegyesítése. I. Károly küzdelmei az oligarchák ellen 1310–1323 (The reunification of the country: Charles I's conflict with the oligarchs, 1310–1323)*, in: *Századok* 122 (1988), pp. 89–146, here pp. 112–114, 116–118, 121, 123; Gyula KRISTÓ, *I. Károly király harcái a tartományurak ellen 1310–1323 (The fights of King Charles I against the oligarchs 1310–1323)*, in: *Századok* 137 (2003), pp. 297–347, here pp. 321, 325–326, 329, 331–334; Attila BÁRÁNY, *Debreceni Dózsa küzdelme a bihari oligarchákkal (Dózsa Debreceni's fights against the oligarchs of Bihar)*, in: Attila BÁRÁNY/ Klára PAPP/ Tamás SZALKAI (eds.), *Debrecen város 650 éves. Várostartörténeti tanulmányok (The town of Debrecen is 650 years old: Urban history studies) (Speculum Historiae Debreceniense 7)*, Debrecen 2011, pp. 75–126, here pp. 90–92, 95, 99–100.

³⁹ See, for example, CURSCHMANN (note 4), p. 208; BRÁZDIL/ KOTYZA (note 33); Rudolf BRÁZDIL/ Oldřich KOTYZA/ Martin BAUCH, *Climate and famines in the Czech Lands prior AD 1500*, in: Dominik COLLET/ Maximilian SCHUH (eds.), *Famines During the 'Little Ice Age' (1300–1800). Socionatural Entanglements in Premodern Societies*, Heidelberg 2017, pp. 91–114. For the 1241–1243 famine in Hungary, see e.g. KISS (note 1), pp. 15–21.

4.1.3 Difficulties and Lack of Food Around 1321?

In addition to a single reference from 1319 on the need of the Chapter of Esztergom (see Figure 7),⁴⁰ there is more evidence of difficulties in western Hungary in 1321. The “unpeaceful times, “lack of food” (*defectum victualium*) and destitution forced the Ják monastery and its people (i.e., including servant population and serfs) to exchange the somewhat distant arable lands in the Rábaköz region in west-central Hungary for a nearby vineyard, a mill, a plough, six oxen and other necessities.⁴¹ Based on the items exchanged, the monastery’s decision affected its economy over the long term beyond “simple,” immediate needs. As the monastery itself was located in the west, near the Austrian border, it is worth considering that the problems described may have been a reflection to some extent not only of the situation in western Hungary, but also in eastern Austria.

In the same year, a very bad grape harvest was reported in both Hungary and Austria.⁴² An additional noteworthy case was recorded in the north: on July 12, 1321, the citizens of the royal town of Zsolna (today Žilina in Slovakia, see Figure 7) asked the king to renew their privileges due to their great poverty and need.⁴³

As for European parallels, in this year the cereal harvest was reportedly bad in the areas further to the west, for example, in the Czech lands and the German territories. The grape harvest was reported to be bad in France, while in the German wine-producing areas 1319 and 1320 were bad years, but 1321 was already somewhat better. Generally, in terms of food shortage and dearth, 1321 appears to have been another hard year in western and central Europe.⁴⁴ England was also hit hard: the harvest of 1321 – like that of 1315, 1316, and, to some extent, 1317 – was a total failure.⁴⁵

⁴⁰ HNA, DF 237825.

⁴¹ HNA, DF 209129.

⁴² *Continuatio Mellicensis. Chronica et annales aevi Salici*, ed. Georg H. PERTZ (MGH Scriptores 9), Hannover 1851, p. 511.

⁴³ Georgius FEJÉR, *Codex diplomaticus Hungariae ecclesiasticus ac civiles*, vol. 11, Buda 1844, pp. 508–510.

⁴⁴ ALEXANDRE (note 17), pp. 442–443; BRÁZDIL/ KOTYZA (note 33), p. 112; JORDAN (note 4), pp. 34–35; Rüdiger GLASER, *Klimageschichte Mitteleuropas: 1200 Jahre Wetter, Klima, Katastrophen*, Darmstadt 2013, p. 88.

⁴⁵ See, for example: Bruce CAMPBELL, Physical shocks, biological hazards, and human impacts: the crisis of the fourteenth century revisited, in: Simonetta CAVACIOCCHI (ed.), *Le interazioni fra economia e ambiente biologico nell’Europe preindustriale. Secc. XIII–XVIII*. Prato 2010, pp. 13–32, here pp. 20–21; Bruce CAMPBELL, Panzootic, pandemics and climatic anomalies in the fourteenth century, in: Bernd HERMANN (ed.), *Beiträge zum Göttinger Umwelthistorischen Kolloquium 2010–2011*, Göttingen 2011, pp. 177–215, here p. 194.

4.1.4 The probable Causes of The Multiple Crisis Period: The 1310s and Early 1320s

At least three major factors might have contributed to these economic difficulties and critical food shortages:

- 1) The internal war and related uncertainties were certainly an important factor during this period. From the late thirteenth century onwards, there was feudal anarchy in the country, and Charles (Robert) I's war against the oligarchs – who practically divided the country amongst themselves – lasted more than two decades in the early fourteenth century.⁴⁶ These wars and unrest affected all the above-mentioned locations around the time of the dearth and famine reports. This is quite clear in the case of the distress or crisis around 1312 and before (e.g., Battle of Rozgony), the months and years prior to spring 1318 (e.g., Battle of Debreceen, unpeaceful times),⁴⁷ and can also be one for the reasons of the local difficulties in and around 1321 in western Hungary, where unpeaceful times were mentioned in the charter of the Ják monastery.⁴⁸
- 2) The few weather-related reports available from these years in Hungary do not provide conclusive information about climatic conditions during this period, but, in combination with the weather-related evidence of the neighboring countries, some conclusions can be posited. The Austrian evidence suggests that the weather conditions that caused damaging floods – for example, in 1316, or, based on a 1309 report on previous flooding, perhaps also in the first decade of the century – most probably also affected (western and central) Hungary. According to the sources for the Czech lands (and to some extent for Austria and parts of Poland), the dismal harvest in 1312 was mainly attributed to drought; in 1315, a drought until late July 1316 was followed by heavy rains, and persistent cool, rainy conditions; unusually cool, wet weather caused problems again during the growing season in 1321.⁴⁹
- 3) Biological factors such as epidemics and animal invasions also contributed to these periods of economic distress. In the late 1300s and the 1310s, there was at least one locust invasion: in the summer of 1309, two contemporary sources mention a locust invasion in Kraina, Styria, Istria, and northern Italy; the Melk

⁴⁶ ENGEL (note 38); KRISTÓ (note 38). International scholarship sometimes refers to Charles (Robert) I as Caroberto.

⁴⁷ For the latest literature on the subject, for example, see BÁRÁNY (note 38), pp. 90–92.

⁴⁸ The unpeaceful times might have been (at least partly) related to the renewed controversies between the king and certain members of powerful Kőszegi family (and their Austrian allies) in the late 1310s and early 1320s. See, for example: ENGEL (note 38), pp. 129–130; KRISTÓ (note 38), pp. 339–342.

⁴⁹ For weather reports and flood documentation in Hungary, see: KISS (note 9); KISS (note 10). For Czech and Austrian weather conditions, see, for example: CURSCHMANN (note 4), p. 208; ALEXANDRE (note 17), pp. 434–443; BRÁZDIL/ KOTYZA (note 33), p. 111.

Annals refer to an invasion in 1310 that lasted for two years.⁵⁰ Moreover, a north Italian source reported an invasion of locusts arriving from the northeast in 1314 (see Figure 6). If the locusts in northern Italy came from the direction of the Carpathian Basin⁵¹ and were already in northern Italy in 1309 (and maybe also in 1314), it is rather probable that locusts had arrived in the Carpathian Basin at least by the previous year(s), namely in 1308 (and maybe also in 1313).⁵² As outlined above, the cattle plague represents a further potential biological hazard, and the great loss of cattle and other domestic animals across Europe likely affected Hungary in the 1310s (or maybe also in the early 1320s), too.⁵³ This might have led to a shortage of livestock in the Carpathian Basin some time in the 1310s.

4.1.5 The Triple (?) Food Crisis of The 1310s To Early 1320s: Some Conclusions

The extant contemporary sources suggest that there might have been two or three more difficult periods during the 1310s and early 1320s. Around (and probably even before) 1312, significant problems can be localized – together with the direct mention of dearth – to the northeastern parts of the country (Szepes county), but the report on need in central Hungary may suggest more widespread problems. The (great) famine prior to the spring of 1318 (1316–1317?) seems greater both in terms of severity and geographical scope, affecting large parts of the country. The evidence for the 1321 hardship or difficulties – mostly from the western part of the country – includes reports of a poor grape harvest, food shortages and monastic communities in dire straits, but reports of destitution in the north open the possibility that the general difficulties reached a large spatial extent within the country.

The food supply problems of the neighboring countries provide further evidence that this was a time of economic distress or crisis in the countries surrounding Hungary, too. Areas both to the north and west of Hungary experienced severe food shortage problems around 1312(–1313) and from 1315 onwards; these difficulties – whether in the form of increased grain exports from Hungary or reduced possibilities for importing foodstuffs in times of need – might have exacerbated difficulties in Hungary, as well.

There are clear parallels in the timing of the Great Famine and long-term subsistence crisis that developed in western and central Europe in the 1310s and

⁵⁰ *Continuatio Mellicensis*, ed. PERTZ (note 42), p. 513. See also: ROHR (note 17), pp. 467–468; CAMUFFO/ ENZI (note 17), pp. 24–26.

⁵¹ See Dario CAMUFFO/ Silvia ENZI, *Locust invasions and climatic factors from the Middle Ages to 1800*, in: *Theoretical and Applied Climatology* 43 (1991), pp. 43–73.

⁵² See, for example, KISS (note 9).

⁵³ See, for example, NEWFIELD (note 21).

early 1320s,⁵⁴ even though the exact extent of the food shortages and distress in Hungary remains unknown. The evidence for the situation in Hungary is insufficient to determine whether these isolated reports are indicators of a multi-annual, subsistence crisis with two or three peaks or simply isolated individual years of severe shortages that were localized or widespread throughout the country. Nonetheless, the information available concerning the cases in 1312 and prior to 1318 raises the possibility of a larger spatial extension of hardship and/or severe food shortage.

4.2 The Late 1340s To The Early 1350s: 1346–1351

Despite the great locust invasion in 1338–1340(-1341?), and the 1341–1344 (esp. 1342–1343) great flood peak in Hungary with hard winter period mentioned both in 1344 and 1345 (Figures 4–6), no sign of any significant food shortage is (yet) detectable in contemporary documentation.⁵⁵ The first indirect references to such difficulties come in February 1346, when poverty forced the monastic community in Zebegény to mortgage land in Baranya county. Likewise, in November, the Order of the Holy Spirit in Budafelhéviz (today in Budapest) mortgaged half of their mill due to the urgent needs of their hospital (see also Figures 3 and 7).⁵⁶

In an application – preserved only in a book of formulae – written maybe in 1348,⁵⁷ regarding to a royal town (name not included) with significant wine production, fires and frequent frosts, that had damaged vines, induced the urban community to ask for a reduction of war (preparation) taxes due to their extreme poverty, destitution, and famine(!). In another charter, the king granted their request.⁵⁸ The edition that includes this charter suggests that the town in question is Pozsony

⁵⁴ See, for example, JORDAN (note 4); Emmanuel LE ROY LADURIE, *Histoire humaine et comparée du climat. Tome 1: Canicules et glaciers XIIIe-XVIIIe siècles*, Paris 2004, pp. 41–56. For the most frequently reference works of basic importance on the subject, see: Henry LUCAS, *The Great European Famine of 1315–1317*, in: *Speculum* 5/4 (1930), pp. 343–377. Ian KERSHAW, *The Great Famine and Agrarian Crisis in England (1315–1322)*, in: *Past&Present* 59 (1973), pp. 3–50. For a more recent overview: JORDAN (note 4), pp. 45–62.

⁵⁵ See Kiss (note 9).

⁵⁶ HNA, DL 76787, 3865.

⁵⁷ The evidence preserved in a contemporary book of formulae and, as such, the dating was removed. Based on the contents of the charter, 1348 seems to be the most possible date for the charter's issue, as the war preparations related to the Neapolitan campaigns mainly affected the years 1347, 1348, 1349 and 1350. The date of the charter issue most probably could not be later than 1349 due to the lack of mentioning the pestilence, but presumably it was in or short after 1347 because of the reference on the great frost). For the detailed discussion of this question see: Kiss/ PÍTI/ SEBŐK (note 3), pp. 51–53.

⁵⁸ Georgius FEJÉR, *Codex diplomaticus Hungariae ecclesiasticus ac civilis*, vol. 9/5, Buda 1842, pp. 630–632.

(Bratislava-Sk), but other royal towns with significant wine production (e.g., Sopron, Kőszeg, or Buda) might just as well be the urban community in question.⁵⁹ In another charter in April 1349, impoverished serfs in the market town of Kapronca (Koprivnica-Hr) received a tax reduction from the archbishop of Esztergom. The archbishop guaranteed the reduction of their taxes until their economic situation had improved.⁶⁰

There are at least four documented cases of impoverished, destitute communities in different parts of the country appealing for relief from financial distress in 1351. In the first case, on January 1, the hospes (guest) population⁶¹ of Dobronya, Németspelsőc, and Bábászék (Dobrá Niva, Plešivec, Babiná in Slovakia; see Figure 7) asked for a long-term reduction of their annual tax, because they could no longer pay the amount which King Béla IV had decreed in 1243.⁶² This may mean that the economic (and/or demographic) situation of the community had changed considerably between the mid-thirteenth and mid-fourteenth century. The hospes population of Szepsi (Moldava nad Bodvou in Slovakia; see Figure 7), in the north, claimed to have somewhat similar problems; in mid-September 1351, the community was granted the free use of the nearby royal forest to alleviate their poverty.⁶³ In the same year, poverty and need forced the monastery of Désvár (Dej in Romania; see Figure 7) in Transylvania to

59 According to ORTVAY, the town itself became a significant wine producer only from the early 16th century onwards, but wine production of town citizens had great importance already in the late medieval period. See: Tivadar ORTVAY, *Pozsony város története* (History of Pozsony town), vol. 2/2, Pozsony [Bratislava] 1898, p. 374. It remains, of course, based on this single reference (an application in which the town citizens clearly would like to give a dramatic picture of their great problems and suffers) an open question as to whether the description of the famine is an exaggeration or reflects the actual situation. Nevertheless, as the king could have informed himself about the situation easily, it seems likely that citizens of the town were in fact experiencing such hard times in this and the preceding years.

60 HNA, DL 43553.

61 In medieval Hungary hospes (guest) population meant the invited migrants, arriving especially in the 13th century, from the west and north, mainly from German-speaking areas (esp. Saxons, Bavarians) and partly from other regions (e.g. Polish, Czechs, French, Walloons, Italians etc), settled in communities and received privileges from the Hungarian kings. Although originally they were usually foreigners, later this name was extended to all communities that received hospes rights, regardless of foreign or Hungarian origin. See, for example: Gyula KRISTÓ/ Pál ENGEL/ Ferenc MAKK (eds.), *Korai magyar történeti lexikon: 9–14. század* (Early Hungarian historical lexicon: 9th-14th centuries), Budapest, 1998, p. 273.

62 HNA, DF 269298. The last settlement was founded by (German) miners who received extensive privileges from the king in 1243. It is also possible that after several decades the productivity of ore mining declined in the area, but other reasons, such as the plague and other difficulties could as well be responsible for the decreased incomes.

63 Imre NAGY, *Anjoukori okmánytár/Codex Diplomaticus Hungaricus Andegavensis*, vol. 5, Budapest 1887, pp. 515–516.

sell a mill in order to repair another mill and the dam on the Maros (Mureş-Ro) river.⁶⁴ Finally, in November, the Pilis Pauliners (Central Hungary) had to sell a vineyard due to their need.⁶⁵

The only reports which offer an explanation for the famine and financial distress are those from 1348, which mention fires and damage to the grape harvests by frequent frosts. As for other weather-related extreme events in Hungary, there are three extant reports on flooding: one report from 1346 (concerning an ongoing and two previous floods), one from 1347, and another from 1348. In addition, one report refers to a harsh winter period and flood in early January 1349, and three further flood reports – one of them about past floods – are known from spring and summer 1349.⁶⁶ As for potential parallels in weather extremes in neighboring countries, a wet and rainy year was reported in Lower Austria in early autumn 1347 with six days of heavy snow and frost devastated the grape harvest. In 1348, lightning killed many people in Carinthia, while the summer in the Czech lands was very dry with windstorms in July and a poor harvest.⁶⁷

A locust invasion is mentioned in the Czech lands in 1346, and Italian sources for 1347 (to 1348?) also indirectly suggest an invasion around this time in the Carpathian Basin. Even more important is the plague, which is documented from late 1348 onwards. The epidemics – named the “ruinous mortality” or “pestilence” – were reported in general in different parts of the country in 1349 as well as 1350.⁶⁸ The dramatic tone in the few extant documents raises the possibility that the plague caused major problems in some areas, and this might have also had a negative effect on food production.

In conclusion, it seems that some areas may well have experienced difficulties in food production as a result of inclement weather even prior to the arrival of the Black Death. Indirect evidence – including long-term tax reductions and the dire need of

64 Kálmán GÉRESI, *A nagy-károlyi gróf Károlyi család oklevéltára* (Cartulary of the count Károlyi family of Nagykaroly), Budapest 1882, pp. 203–204.

65 NAGY (note 63), pp. 527–528.

66 KISS (note 9); Andrea KISS, *Az 1340-es évek árvizei, vízállás-problémái és környezetük, különös tekintettel az 1342. és 1343. évekre* (Floods, water-level problems and the environment in the 1340s, with special emphasis on the years of 1342, 1343), in: Tibor ALMÁSI/ György SZABADOS/ Éva RÉVÉSZ (eds.), *Fons, skepsis, lex*, Szeged 2010, pp. 181–193, here pp. 188–189; see also: KISS (note 10).

67 For sources and analysis of Austrian evidence: ROHR (note 17), pp. 427, 448. For the Czech areas: BRÁZDIL/ KOTYZA (note 33), p. 115.

68 On the potential locust invasion: BRÁZDIL/ KOTYZA (note 39), p. 115; CAMUFFO/ ENZI (note 17), p. 31. For the primary sources references to the plague: 11 December 1348: Erdélyi Okmánytár/ Codex Diplomaticus Transsylvaniae, eds. Zsigmond JAKÓ/ Géza HEGYI/ András W. KOVÁCS, Budapest 2008, pp. 194–195. In 1349, charters are available for the ongoing plague epidemics, issued on March 17, April 1, October 10. Other charters are known that there was no ongoing plague in certain areas on June 7 and 25, July 2 and 11 as well as on October 7; for annual reference: June 26, 1349. See: Ferenc SEBŐK, *Anjou-kori oklevéltár/ Documenta res Hungaricas tempore regum Andegavensium illustriantia*, vol. 33, Szeged 2015, pp. 109, 138, 241–242, 249, 264, 367, 370, 417. For evidence of the epidemics in 1350: Imre NAGY/ Dezső VÉGHÉLY/ Gyula NAGY, *Zala vármegye története. Oklevéltár* (History of Zala county: Cartulary), vol. 1, Budapest 1886, pp. 508–509.

ecclesiastical, urban, and other privileged communities – suggests increased problems and a decline in production capacities at least over some or large parts of the country by 1350 or 1351 at the latest.⁶⁹

4.3 The early 1360s: 1361–1362, 1364

4.3.1 Bad Harvest and Special Orders in 1361–1362

In July 1361, Duke Rudolf IV of Austria, issued a charter in which he mentioned the year's bad grain harvest in Austria, the Czech lands, Bavaria, and Hungary. Moreover, the Habsburg duke added that the grape harvest that year was also bad. Due to these circumstances, as well as to fires and the plague, the town of Vienna was in dire straits at that time.⁷⁰ In the same year, famine was reported in the Czech lands, Austria, and Silesia.⁷¹ In addition to this information on the bad harvest itself, Duke Rudolf's charter is important because it reveals certain kind of interrelations, namely that Vienna relied not only on the agrarian output of (Lower-)Austria for its food supply but, when necessary, also depended on imported foodstuffs from neighboring countries.

A document from April 1362 provides further significant information: Louis I, as king of Dalmatia, ordered the council of Ragusa (Dubrovnik-Hr) not to buy up more grain in his kingdom and territories (i.e., Hungary and the Croatian kingdoms) than necessary for their own use and also not to transport any grain abroad from the town or its territory.⁷² In another case in western Hungary, dated July 1, impoverished citizens of Vasvár town had to sell the parish's mill to fund some urgently needed repairs of the church's roof.⁷³ In September of that same year, citizens of Trau (Trogir-Hr) in Dalmatia unsuccessfully petitioned the king for a reduction in the price of salt for help in financing the fortification around their suburb; the king referred to the ongoing and possible future difficulties within his territory (i.e., the countries under the Hungarian crown).⁷⁴

⁶⁹ It is, therefore, a further interesting fact that in 1351 the king renewed the old noble rights (the Golden bull from 1222), for example, regarding taxation and land inheritance and purchase, and also issued new orders (e.g., regarding land ownership related to mining and rights, regulating some parts of legal procedures). See: Dezső MÁRKUS (ed.), *Corpus Iuris Hungarici/Magyar törvénytár*, Budapest 1899, pp. 171–181.

⁷⁰ Peter CSENDES/ Ferdinand OPLL (eds.), *Wien. Band 1: Geschichte einer Stadt von den Anfängen bis zur Ersten Türkenbelagerung*, Wien 2001, p. 269.

⁷¹ BRÁZDIL/ KOTYZA (note 33), p. 116; ROHR (note 17), p. 443.

⁷² *Ragusa és Magyarország összeköttetéseinek oklevéltára/Diplomatarium Ragusanum Reipublicae Ragusanae cum regno Hungariae*, eds. József GELCHICH/ Lajos THALLÓCZY, Budapest 1887, p. 35.

⁷³ HNA, DL 91578.

⁷⁴ Georgius FEJÉR, *Codex diplomaticus Hungariae ecclesiasticus ac civiles*, vol. 9/3, Buda 1834, pp. 317–318.

Among the most probable reasons for the bad harvest and the prohibition of grain exports is the vicissitudinous weather conditions that affected large parts of central Europe during this time: the winter of 1361 was reportedly dry and cold, and it was followed by a hot, dry summer with frequent thunderstorms. In Hungary, reports of early spring snow in both the west and the north suggest the possibility that there was more significant (late) winter precipitation than usual.⁷⁵ Further evidence from March 1362 suggests that there was great drought in middle Dalmatia, due to which the Black Vlach (Morlach) population in the Trogir area asked the Dalmatian duke to alleviate their grazing problems (in the king's name) by permitting the use of the town's territories and water resources. Based on the early date and the potential for such problems to have developed over the long term, the drought might have started in the previous year.⁷⁶

The difficulties mentioned here were preceded by epidemics in 1359 and 1360,⁷⁷ at least, and the somewhat increased frequency of mentions of flooding in Hungarian records may suggest that the area – like western and central Europe – received more total precipitation and/or experienced more episodes of especially intense precipitation in these years. A further interesting case on need and difficulties of an ecclesiastical community is reported in 1360, when the bishop of Győr gave a village to the Cistercian monastery of Borsmonostor (Klostermarienberg-A) located near the Austrian border, to help the monastery in its considerable need.⁷⁸ This latter case may provide an indirect evidence that, at least near the western borders of the country, in parallel to the ongoing plague epidemics, need and difficulties were documented already in 1360, a year before the best harvest report.

4.3.2 1364: A Special Year Requires Special Orders

In July 1364, the Hungarian king, Louis I, issued emergency orders in response to high prices and/or grain shortage (*caristia*) that prevailed in Hungary in 1364.⁷⁹ The charter (temporarily) abolished inland tolls for foodstuffs in the entire country and included a

⁷⁵ For source evidence, see: KISS (note 10). A further charter, issued in 1364 (HNA, DL 90540), refers to a perambulation that took place on March 10, in 1361, when land measurements were obstructed by the deep snow in Turóc county (today north-central Slovakia).

⁷⁶ For more details, see KISS/ NIKOLIĆ (note 6).

⁷⁷ Sources: Lipót ÓVÁRY, *A magyar tudományos akadémia történelmi bizottságának oklevél-másolatai* (Charter-copies of the historical committee of the Hungarian Academy of Science), vol. 1, Budapest 1890, p. 51. Gergely BUZÁS/ Orsolya MÉSZÁROS, *A középkori Visegrád egyházainak régészeti kutatásai* (Archaeological investigations of churches in medieval Visegrád), in: *Magyar Sion. Új folyam* 2/44 (2008), 71–103, here p. 84. See also: HNA, DL 63074: based on the charter, pestilence prevailed in early November 1360 in medieval Turóc county. Due to this late-autumn evidence, it is possible that, similar to some of the neighboring countries, the plague or pestilence was still present in the country in 1361.

⁷⁸ See KISS (note 10). For the Borsmonostor case in 1360, see: FEJÉR (note 74), p. 174.

⁷⁹ FEJÉR (note 74), pp. 408–411. HNA, DF 238823.

long list of the relevant wares: wheat, clean winter wheat, barley, oat, millet, malt, flour, bread, lentils, peas, beans, and “vegetables and all other legumes.” The king ordered that surplus food, beyond personal needs for one year, be sold to those in need at a fixed, “normal” price, and he made convents and parish priests responsible for organizing and controlling these transactions. One town (Somorja; Šamorín-Sk) was tasked with sending the news to other towns. The case may also indirectly suggest notable regional differences in the quantity of stored grain and probably also in the actual harvest results within the country. In this respect, there is an interesting parallel to the 1863–1864 dearth or famine, when a catastrophic drought led to considerable regional differences in agricultural production and, as a result, in the severity of food shortage problems.⁸⁰

Although the charter did not mention what caused the dearth beyond the problems described for 1361 and 1362, an extraordinarily severe winter – the hardest winter recorded in the fourteenth century – struck all of Europe in 1364.⁸¹ This winter was most probably rather severe also in the Carpathian Basin: in January the deep snow obstructed perambulations in a rather extensive area in southwest Hungary, south to Lake Balaton.⁸² In addition, in 1363 locust invasion, that came from the Carpathian Basin, was described in northern Italy; reports of locusts there persisted until 1366. Similar invasions are documented in German areas in 1364 and in Austria in 1366.⁸³ Together, these sources suggest another long locust invasion in Hungary that started by 1363 at the latest.

4.4 Late fourteenth-century dearths and food supply problems: 1374, 1381, the early and mid- 1390s

4.4.1 The Great Dearth in (1373–)1374

In 1371, a royal charter referred to the poverty and need of citizens in Pozsony (Bratislava-Sk). The king, who cited a fire in the town as a cause of these problems, granted the town a partial tax exemption to ease the difficulties. Further (tax reduction) privileges were afforded the residents of Pozsony in 1374 as the results of (the same?) fire. These charters are particularly significant in that they list the reason(s) for the problems they sought to alleviate.⁸⁴

⁸⁰ Krisztina BOA, *Az 1863–1864. Évi aszály és ínség Békés megyében* (The 1863–1864 drought and dearth in Békés county), *Fons* 19/2 (2012), pp. 161–199; here pp. 166–167, 199.

⁸¹ See, for example, BRÁZDIL/ KOTYZA (note 33), p. 116; GLASER (note 44), p. 77; LADURIE (note 54), pp. 73–74; ALEXANDRE (note 17), pp. 493–497.

⁸² HNA, DL 87396. For more details, see KISS (note 9).

⁸³ *Continuatio Claustroneuburgensis V. Chronica et annales aevi Salici*, ed. Georg H. PERTZ (MGH *Scriptores* 9), Hannover 1851, p. 736. See also: ALEXANDRE (note 17), pp. 493, 500; CAMUFFO/ ENZI (note 17), pp. 33–35; ROHR (note 17), p. 475; GLASER (note 44), p. 67.

⁸⁴ Georgius FEJÉR, *Codex diplomaticus Hungariae ecclesiasticus ac civiles*, vol. 9/4, Buda 1834, pp. 339, 569–572.

There is a more general evidence of widespread financial difficulties in 1374: while travelling in Hungary in the winter of 1374, the pope's tax collector justified his unusually high expenses by referring to floods and a great dearth (*magna caristia*) that prevailed during this time "in those areas." A later account of his activities also mentioned the dearth and his extraordinary expenses.⁸⁵ The report records at least one reason for his unexpectedly high travel expenses: floods. The year was also rather unusual in other parts of central Europe: the winter was exceptionally rainy, and major rivers including the Rhine, the Vltava, and the Danube rose far about their banks in late winter and early spring.⁸⁶ The ongoing epidemics that prevailed during this time in large parts of Europe may also have contributed to the high prices and dearth.⁸⁷ Furthermore, in December 1373, the new denar was introduced in Hungary, which was of a lesser value than the previous one.⁸⁸

Bad harvests were reported throughout Europe during this year, including, for example, northern Italy, France, the Low Countries, the southern German areas and the Czech lands. In the German areas, the summer of 1373 was hot and very dry, and that was also the case at least in the first part of the summer of 1374. Furthermore, a clear food crisis with very high grain prices, dearth, and even famine prevailed in the southern part of France, northern and central Italy, both around 1369 to 1371 and in 1374 to 1375.⁸⁹

After the 1374 dearth reference, the need of the Pápóc provosts (West-Hungary) is mentioned in 1377, when the bishop of Győr gave them the tithe of two villages. Due to the general phrasing it is not possible to declare with certainty that the donation was due to current or near-past difficulties.⁹⁰

85 *Rationes collectorum pontificorum in Hungaria/Pápai tizedszedők számadásai 1281–1375*, ed. in chief, Arnold IPOLYI (*Monumenta Vaticana historiam regni Hungariae I/1*), Budapest 1887, pp. 460–461.

86 ALEXANDRE (note 17), pp. 508–511; BRÁZDIL/ KOTYZA (note 33), p. 117; GLASER (note 44), p. 222. See also: Oliver WETTER et al., The largest floods in the High Rhine basin since 1268 assessed from documentary and instrumental evidence, in: *Hydrological Sciences Journal* 56/5 (2011), pp. 733–758, here p. 753.

87 BIRABEN (note 20), p. 440. The 1374 plague is often mentioned in Hungarian scientific literature; see e.g. István SZABÓ, *Magyarország népessége az 1330-as és az 1525-ös évek között* (Population of Hungary between 1330 and 1525), in: József KOVACSICS, *Magyarország történeti demográfiája* (Historical demography of Hungary), Budapest 1963, p. 64. Iván BERTÉNYI, *A tizennegyedik század története* (History of the fourteenth century), Budapest 2000, p. 77. Nonetheless, direct contemporary source evidence on the destruction of this epidemic is only cited regarding Zagreb (i.e. Slavonia), and not concerning Hungary. For the Zagreb evidence, see: Ivan K. TKALČIĆ, *Monumenta historica civitatis Zagrabiæ*, Vol. 1, Zagreb 1889, pp. 244, 261. Zagreb experienced rather hard times around these years: after the plague, one part of the town burnt down in the next year. See also: Béla Iványi, *Adatok a Körmendi Levéltárból, a pestis XVI-XVII. századi történetéhez 1510–1692* (Data to the history of plague in the 16th-17th centuries from the Körmend Archives), *Orvostörténeti Közlemények – Supplementum* 3 (1965), p. 60.

88 Pál ENGEL, *A 14. századi magyar pénztörténet néhány kérdése* (Some questions of the Hungarian monetary history in the fourteenth-century), in: *Századok* 124/1 (1990), pp. 25–93, here pp. 54, 66.

89 ALEXANDRE (note 17), pp. 508–514; LADURIE (note 54), pp. 73–88; GLASER (note 44), pp. 67, 77, 90.

90 FEJÉR (note 84), pp. 168–170.

4.4.2 Dearth and Great Plague in 1381

Dearth or high prices (*caristia*) is mentioned in June 1381 in a general sense: in a case echoing those of 1312, the Dominican nuns on Rabbit Island sold a landed property in southwest Hungary (again in Baranya county) “due to the dearth, in order to buy food.” The charter adds that they spent the money for food and for urgent repairs to their building.⁹¹ It is noteworthy (cause or consequence?) that the king once again devalued the denar in 1380 (as he had already done in 1373).⁹² A notable social conflict – and a probable sign of more widespread difficulties – occurred in 1381 in the royal town of Zsolna (Žilina-Sk): the Slavic (Czech) population rose up against the Germans, who possessed the majority of positions in the town council. The king finally intervened to solve the problem by ordering equal representation of the two leading ethnic groups in the town government.⁹³

In the next year, in 1382, as a direct consequence of the extreme poverty and need of the Benedictine monastery of Tihany, the king ordered all landowners to give back the lands to once the monastery had possessed. With reference to the same problems and reasons, the order was repeated by Queen Mary in 1393. Apart from the possibility that the first royal order might have not been effective enough so that a second order had to be issued a decade later, the two cases are also interesting because the charters were issued in both cases one year, respectively, after a year with dearth or bad harvest mentions.⁹⁴

The severe plague or pestilence was mainly documented concerning the year 1381, but plague was most probably present also in 1380 and 1382,⁹⁵ and might well have contributed to the dearth. By autumn 1381, the epidemic had so seriously affected some parts of the country that the king issued a charter on November 1 postponing all legal processes in the country until April 24 of the following year due to the severe prevailing pestilence.⁹⁶ Little is known about the weather and harvest conditions in 1380 and 1381 in Hungary except for the accounts of heavy snowfall in early March 1381 in the western part of the country, and of inclement weather combined with flood along the Tisza in the east.⁹⁷ Despite a severe, snowy winter and subsequent rainy March

⁹¹ FEJÉR (note 43), p. 475; HNA, DL 6793.

⁹² ENGEL (note 79), p. 54.

⁹³ Erik FÜGEDL, A befogadó: a középkori Magyar Királyság (The receptive: the medieval Hungarian Kingdom), in: *Történelmi Szemle* 22/2 (1979), pp. 354–376, here p. 371.

⁹⁴ 1382: FEJÉR (note 58), pp. 589–591. 1393: Georgius FEJÉR, *Codex diplomaticus Hungariae ecclesiasticus ac civiles*, vol. 10/2, Buda 1834, pp. 92–93.

⁹⁵ See, for example, HNA, DL 58617, 90953; Imre NAGY, János NAGY, Dezső VÉGHÉLYI, *Codex diplomaticus domus senioris comitum Zichy de Zich et Vasonkeő*, Budapest 1878, pp. 217–218. See also: BIRABEN (note 20), p. 440; BERTÉNYI (note 87), p. 77. Although the available contemporary sources in Hungary only refer to the plague in 1381.

⁹⁶ FEJÉR (note 43), p. 481.

⁹⁷ HNA, DL 96560, DF 262640.

followed by a drought, the harvest was not bad in the German lands. Both England and France, however, suffered bad harvests in 1381 due to rainy weather.⁹⁸

Connected to possible problems in Austria, another case, dated to 1385, is worth mentioning. In this year the Prior General of the Hungarian province of the Augustinian Order gave a permission to the Augustinian convents of Bruck and Marchegg in Austria, located at the eastern edge of the Bavarian province near Hungary, to ask for food in their need and difficulties also in Hungary, in locations which Hungarian monks do not usually visit with the same purpose.⁹⁹

4.4.3 Reports of Failed Harvest, and High Prices From the Early and Mid-1390s

Apart from a royal donation to the Esztergom Chapter in their poverty and need in 1390, more direct and significant problems were documented in 1392, when cold weather damaged grapevines, while bad harvest of other products (especially hay) was also reported in Pozsony/Pressburg (Bratislava-Sk). Moreover, citizens of Pozsony appealed to the queen for a reduction in taxes due to repeated bad grape harvests and uncultivated vineyards.¹⁰⁰ These petitioners blamed an “invasion of cold weather/times” (*propter frigiditatis invasionem*) for their distress, which suggests that the severe cold and hoarfrost reported on 6 October, 1392, in (Lower-) Austria also affected Pozsony. According to the Melk Annals, this cold snap caused immense damage.¹⁰¹

On 27 November in 1395, the Modenese ambassador – while staying in the Hungarian royal court – wrote to his lord, complaining about the very high prices that prevailed at that time in Buda.¹⁰² The ambassador referred to the high prices as a reason for his wanting to return home. No information is available as to why prices in Buda were so high, and there are no other known contemporary reports from within Hungary related to this question. There is more evidence, however, on the situation in neighboring countries. Although bad harvests, mainly due to a severe drought in the previous year of 1393, were reported for 1394 in Silesia, Austria, and very probably also in the Czech lands, the *Kleine Klosterneuburger Chronik* suggests that the harvest in 1395 was much improved, both in terms of wine and grain. Nonetheless, the chronicler added that “bad coins” came from Bavaria during this year, which

98 ALEXANDRE (note 17), p. 520; LADURIE (note 54), pp. 88–89.

99 FEJÉR (note 58), pp. 258–259.

100 1390: Georgius FEJÉR, *Codex diplomaticus Hungariae ecclesiasticus ac civiles*, vol. 10/1, Buda 1834, pp. 573–575. 1392: Tivadar ORTVAY, *Pozsony város története (History of Pozsony town)*, vol. 2/3, Pozsony 1894, p. 164.

101 *Continuatio Mellicensis*, ed. PERTZ (note 42), p. 514.

102 ÓVÁRY (note 77), pp. 58–59.

caused problems in Austria.¹⁰³ In the area of around Mainz and Cologne, however, hail damaged both the vineyards and other crops in summer 1395, which prolonged the food shortage problems into that year, too.¹⁰⁴

5 Conclusions and Outlook

By addressing primary sources that have garnered relatively little attention up until now, the present study has sought to deepen our understanding of difficulties and crises related to food supply in fourteenth-century Hungary. Despite the relative scarcity of direct and indirect documentation, it is possible to identify at least five periods of considerable or severe food supply problems and some additional shortages which were less severe:

- 1) 1310s–early 1320s: a) dearth in the north and need around 1312; b) (great) famine in a period prior to spring 1318 (1316–1317?); c) a lack or shortage of food in 1321.
- 2) late 1340s–early 1350s: widespread need, difficulties, local mention of famine;
- 3) early 1360s: a) bad grain harvests, export prohibitions in 1361(–1362); b) dearth resulting in emergency regulations in 1364;
- 4) (1373–)1374: great dearth and very high prices;
- 5) 1381: dearth;
- 6) unknown intensity of difficulties: 1392 (local problem?) and in 1395 (high prices).

Any attempt to understand what caused these food shortages and crises must consider the combined effects of multiple factors as well as the conditions of the preceding years. Apart from the period of the 1310s and early 1320s, when internal war was clearly an important factor, there are significant correlations between food supply problems and periods of human epidemics (plague), but causal relationships were not documented in detail. Moreover, there are notable overlaps with (possible) locust invasions and extreme weather including severe frosts, hard winters, floods, and droughts. The contemporary author Kükülle emphasized the direct and primary significance of inclement weather conditions, droughts, and locust (and mice) invasions in the evolution of famines.

In most cases, although sometimes with a delay, difficult years or multi-annual crisis periods in Hungary correlate with food crises documented in western and central Europe. This raises the question of whether east central Europe was more integrated in the European economy than historians often expect. This could suggest a stronger interdependence between neighboring countries, but it is also possible that significant stress, external factors, affected other parts of Europe at roughly the same time.

103 Hartmann J. ZEIBIG (ed.), *Die kleine Klosterneuburger Chronik: 1322 bis 1428*, Wien 1851, p. 9.

104 ALEXANDRE (note 17), p. 534.

These external factors include epidemics, weather and climatic anomalies – including an increase of weather-related extremes and weather-related natural or biological hazards – and long-term social conflicts (e.g., wars). These factors sometimes affected large parts of Europe simultaneously and had different consequences depending on varying severity of the influencing factors as well as the actual local-regional socio-economic background including the conditions of preceding years.