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# FIGURES IN AN IMPERIAL LANDSCAPE: ECOLOGICAL AND SOCIETAL FACTORS ON SETTLEMENT PATTERNS AND AGRICULTURE IN ROMAN ITALY

*Annalisa Marzano*

The third century CE was a period of great political and economic instability in the western part of the Roman Empire. In Italy, as in many Western provinces, starting with the second half of the second century CE archaeologists have identified many signs of 'decline' and 'crisis', at both rural and urban sites. In this period, the boom in building activity in the towns and cities of Roman Italy that had started in the early first century CE died out almost completely. In the countryside, some rural sites appear to have been abandoned altogether, while others display poor- quality repairs and the demise of previously luxurious residential rooms or public buildings, repurposed for small-scale production actives such as smelting.

For some scholars, this evidence of decline at villas and farms is an indication that Italian agriculture, particularly viticulture, was in crisis due to the competition of the now wine-producing provinces.[1] Others have identified as cause a demographic contraction following the second- century Antonine Plague that, from the late 160s CE until about 180, had spread through the Empire and was followed by serious political instability in the third century CE.[2] Ecology and climate change were recently added to the debate. Scholars have been asking, for instance, whether the end of the Roman Climatic Optimum,[3] which was followed by colder average temperatures and inconstant precipitation, has a causal link with the various epidemics of late antiquity and with the reversion to marshland of land that had been previously reclaimed and brought under cultivation. [4]

In this chapter, I assess what contribution archaeological data for Roman imperial Italy can make to this debate. I focus on two regional case studies: the eastern part of Cisalpine Gaul (corresponding to part of the modern Italian regions of Veneto and Emilia

[1] For an overview of this debate, see Marzano (2007).
[2] The nature of the 'plague' (possibly smallpox) and its demographic impact are debated; see the essays in Lo Cascio (2012).
[3] Also known as the Roman Warm Period, it denotes a period of, on average, warm, wet, and stable climate across much of the Roman Empire; its chronological boundaries are not firmly defined. Sometimes it is given as the period from c. 300 BCE to 300 CE; Harper (2018, 44) proposes c.200 BCE–150 CE as "a coarse abstraction imposed on a range of evidence, but not arbitrarily". On reconstructing the Roman climate: McCormick and Harper (2018).
[4] Harper (2018) for an emphasis on climate and epidemics as causes for the socio- political disruption of the later Roman empire; see also Brooke (2014) and, for a critical evaluation of theories that explain complex societal processes largely by natural forces, Erdkamp (2019).

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Romagna) and central and northern Etruria (modern Tuscany). The reason behind the choice of these two geographic regions is twofold. The first, most important reason, is the availability of considerable archaeological data resulting from long-term field survey projects and numerous excavations. Such data allow the reconstruction of settlement patterns over time and offer the possibility to compare the Republican, early imperial and late imperial periods. The second reason for my choice is the environmental and geographic differences between these two areas. Situated on each side of the Apennine Mountain range, the two areas have distinct landscapes and micro-climates. Whereas for eastern Cisalpine Gaul river deltas, coastal lagoons and marshland were the primary features of the landscape, central and northern Etruria featured rolling hills with costal tracts of Mediterranean shrub land and much smaller river systems (primarily the mouth of the Arno) when compared to the River Po and its many tributaries. In attempting to evaluate a possible link between the picture emerging from archaeology and climate change, it seemed important to examine geographic areas that, although in relative proximity, had different ecologies. As attested by the current debate on global warming and the effects of extreme weather, overall global climatic changes can manifest themselves in very different ways depending on the region under consideration.

## *Eastern Cisalpine Gaul*

The majority of the data pertaining to rural sites in this region derives from field surveys. This type of investigation has a number of limitations, chiefly that the interpretation of what type of site lies buried under the ground depends entirely on the type of finds visible on the surface, as well as on the size of the surface scatter. Determining the chronology of such sites—i.e. when they were built, for how long they were used, when they were abandoned—also depends on the material finds observed on the surface. Diagnostic finds, usually fragments of specific types of well-dated pottery, are the most important indicators in determining the chronology of a site in a field survey. Obviously, surface finds may not, in fact, reflect the complete occupational history of a site and the chronology of certain popular types of pottery spans over a hundred years or more. Hence, site classification and dating from field survey should not be taken as necessarily giving the complete picture in the history of occupation of a site. Still, field surveys are the best tool to study a sizeable area and to produce an assessment of settlement hierarchy without carrying out multiple archaeological excavations. Moreover, by allowing the investigation of large portions of territory in relatively short time and with little expenses (when compared to

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excavation), field surveys are a very powerful investigative tool for regional studies that no programme of excavation can match. In what follows, I focus particularly on the 'Bassa Modenese' region and on the territory delimited by the cities of Rovigo, Adria and Padova.

*The Data: Modena and the Bassa Modenese*

A long-term field survey programme was carried out in the Bassa Modenese region, in the area known as the 'Valli'[5]; the identified sites were surveyed more than once over a period of ten years thus allowing for better classification and understanding of post-depositional processes (Calzolari et al. 1997). The sites identified in the survey were classified into four categories:

| *Site categories* | *Area of material scatter ($m^2$)* | *Percentage of sites surveyed (%)* |
|---|---|---|
| A | 50–300 | 39 |
| B | 500–1200 | 38 |
| C | 1200–2500 | 16 |
| D | 3000–5000 | 7 |

The labels A–D are assigned here for practical needs but are not used in the original study

Of the surveyed sites, 23.5% was established between the mid-second century BCE and the first century BCE and remained in use until the first/second centuries CE, when other sites seem to have been established, reaching a total of 53 sites (24 sites continue to be in use from the previous period; 29 are newly established in this period). After the end of the second century, the number of sites recorded in the survey diminishes slightly, reaching 38 sites (6 new foundations and 32 that continue to be occupied from an earlier phase). However, the real break in occupation in this area occurred at the end of the sixth and during the seventh century, when only four sites are attested. In the larger region too, a drastic break occurred in the sixth century, when there was the Greek-Gothic war, followed by the arrival of the Lombards. Thus, as far as surface finds allow reconstructing the

[5] The Bassa Modenese, or simply 'La Bassa', is part of the northern territory of the province of Modena, and measures ca. 15 × 40 km. This area of low land is at less than 25 m a.s.l. and is crossed by two tributaries of the Po, the Serchia and Panaro Rivers.

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habitation phases of a given site, in the Bassa Modenese area the third century does not appear as a period of major contraction, nor as a period of increased habitation in the countryside at a time when it is generally recognized that civic life and urban services were profoundly changing. As we shall see later in the chapter, variation in land-holding patterns may be the reason behind this modest change in the number of attested rural sites. When considering the whole eastern part of Emilia Romagna, the third century appears as a period of crisis, after which a number of settlements remained relatively stable until the fifth century, with the sixth being the time when break in occupation, and the emergence of new settlement forms, occurred (Negrelli 2017, 425–427, 2013).

A recent study of palaeobotanical data from Modena, the ancient Mutina, offers interesting observations about changes in the local environment which suggest more unstable climatic conditions in the late- antique period (Bosi et al. 2019).[6] In the period spanning from the third to the sixth century CE, Mutina was affected by a number of severe floods (a recurrent problem also after the Roman era); indeed, the Roman archaeological strata are covered by an alluvial deposit c.6 m thick. From the early imperial period down to the fifth/sixth centuries CE, the ground level of Mutina rose by 3 m, due to the occurrence of various flood events (Bosi et al. 2019, 4). The results of the archaeobotanical analysis carried out at five sites in and outside of ancient Mutina in late-antique layers (from the third to the sixth century) have clearly shown that after two severe flood events (one dated to the late third/early fourth century CE, the other to the fourth/fifth century), the recovery of the local vegetation and type of flora attested were different. In the case of the former flood, the plant remains attested by carpological remains, pollen and tree trunks indicate that a wet environment developed, with fluctuating water levels, but that human activities such as the cultivation of the grape vine (and, on the hills, olive) and animal husbandry continued.[7] However, after the latter flood, the wetlands spread further and hygrophilous woods developed, with black alder as its main tree species. The authors of this study suggest that: '(t)he reason of this different response to alluvial episodes can probably be found in the climatic conditions and the land management that characterize the Po area around 1500–

[6] A survey of the territory of Mutina carried out in the 1980s is only available as a schematic site catalogue, with no methodological information on the survey or criteria followed for site classification: see Launaro (2011, 107–108 and Table A.3).

[7] Animal husbandry, probably sheep rearing since Mutina was known for its quality wool (e.g., see Strabo 7.1.12), is suggested not only by the type of plants identified, which indicate an open/pasture-like landscape, but also by coprophilous fungi; see Bosi et al. 2019, 14.



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1300 years ago. In fact, a cooler climate and a greater humidity, joined to the hydrogeological imbalance, occurred at the end of the Roman Empire' (Bosi et al. 2019, 20). In their view, the flood of the end of the third and the beginning of the fourth century AD marks the start of a period of great variability. The archaeobotanical data also suggest a loss in plant diversity when comparing the early and mid-imperial period with late antiquity. The reduction in plant diversity regarded not only cultivated plants (a smaller variety of fruits, vegetables and herbs/spices are attested), but also spontaneous plants, for which only half of the taxa attested in the earlier centuries were recorded. This too *may* be due to the deterioration of climatic conditions and 'of the substrate that favoured few species more adaptable to anthropogenic habitats' (Bosi et al. 2019, 21).[8]

*The Data: Rovigo, Adria and Padova*

The other part of Cisalpine Gaul examined here is the territory defined by the towns of Rovigo, Adria and Padova. Field surveys around Rovigo, covering also the territories around Pontecchio, Guardia Veneta and Crespino, have revealed that between the first century BCE and the first century CE there was a notable increase in number of sites attested in the territory, followed by a 'stable' phase in the late first and second centuries CE (Toniolo 2000). However, even within this small area, there are differences: near Rovigo and Crispino, the majority of the sites was abandoned completely between the second and the third centuries CE, but in the rest of the surveyed area only a small drop in number was recorded. On the basis of the surface material finds, the abandoned sites were those that had a relatively 'short' occupation history, having been established only sometime during the course of the second century CE.

The late Republican Julio-Claudian sites identified in the survey are located relatively close to each other, suggesting a number of medium- sized land plots with farms rather than fewer, larger estates. According to Toniolo, this could be an indication of the existence of farms oriented towards self-sufficiency rather than estates practising intensive agriculture for the market, but it is not necessarily so: small and medium land- holders too could participate in commercial agriculture (Toniolo 2000; Kron 2008). A recent study by Maria

[8] See also Marchesini and Marvelli (2017, 300–301) on the villa site of S. Agata Bolognese, where in the fourth/fifth century CE humid areas and areas covered by woods increased, a possible consequence of diminished human effort in the management of the environment.



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Stella Busana and Claudia Florin (2020) of a corpus of 203 rural sites in the whole of Cisalpine Gaul dating from the second century BCE to the fifth century CE suggests that until the end of the second century CE small and medium farms and villas formed part of a single productive system engaged in market- oriented agriculture. However, what the location of the sites and size of the land plots in the Rodrigo-Guardia Veneta-Crispino area clearly show is a rural occupation connected to military veteran settlements. In terms of history of occupation of these rural sites, an interesting datum emerges: the sites that were occupied continuously, probably without any caesura, from their establishment in the first century BCE/first century CE until the seventh century CE were those few, larger sites that can be classified as 'villas'.[9] These larger sites are also located at a greater distance from each other than the smaller 'farms'; it is therefore a fair inference that larger *fundi,* where commercial agriculture and animal husbandry were practised on a large scale, were attached to these villas (Toniolo 2000). The long occupational history of these larger sites was probably due to the range of production activities that took place on these estates and the ability to revise/update investment and production strategies according to the changed circumstances over time. Larger sites suggest more affluent and socially connected owners, and this may well explain their longer history of occupation. It is also likely that more successful landowners acquired over time smaller and less successful neighbouring properties.

Recent studies on the centuriation system of the territory to the south of Padova (ancient Patavium), including Adria and Este, have emphasized that a more intense and systematic occupation of the rural territory occurred in the Augustan age.[10] The appearance of many more rural sites of the villa/farm type seems to be in clear connection with the establish- ment of a new centuriation grid. Augustan-age interventions in the area are known also in urban contexts of various important centres, such as the urban 'makeover' attested in the town of Patavium and Ateste (modern Este). Such interventions, showing a clear re-organization of the territory and of land ownership, can be connected with the settlement of veterans after Actium. The Caesarean *municipium* of Ateste became a *colonia* with Augustus, who assigned the territory of the town to several veterans of the Actian legions.[11] For the *ager* of Patavium too, on the basis of dedications by Augustan veterans and soldiers

[9] Surface finds include also marble fragments, mosaic *tesserae*, etc.
[10] Matteazzi (2014a) for the reasons why this centuriation system should date to the Augustan age.
[11] Plin., *Historia Naturalis* 3.130; cf. *CIL* 5.2501.



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from the sanctuary of Colle Montirone near Abano, it is plausible to infer land assignments to veterans. Intense rural settlement in the first and second centuries CE emerges also from the survey carried out on c.200 ha of territory near ancient Aquae Patavinae, where rural settlements and pastoral and agricultural exploitation coincide with the floruit of thermalism and the monumental development of the urban centre (Basso et al. 2013, 76–77). However, the majority of the rural sites established under Augustus do not seem to last beyond the end of the second century CE.

The territory of Adria (ancient Atria) presents a similar pattern: intense rural occupation in the first century CE, which continued until the late second century, with a decline in the number of sites in the third century, when Atria itself is said to have experienced an economic crisis (Matteazzi 2017, 135). The third century 'decline' in the number of rural sites is more evident in the southern part of Atria's territory than in the north, although some caution needs to be expressed here, since such distribution map could simply be the result of the actual research carried out on the ground. The time of the intense first-century CE occupation was a period of very favourable condition in this region: geological studies have observed a marine water regression phase and more stable river conditions, with consequent consolidation of the littoral area (Matteazzi 2014b, 330–331). These conditions meant that it was possible to settle also in low-lying zones in proximity of the marshes, making reclamation and drainage of the land easier.

To sum up, the picture emerging from these various field surveys in different parts of Cisalpine Gaul indicates that in all the areas surveyed the late first century BCE and the first century CE were periods in which the land was settled much more intensively; such intense occupation lasted for the whole of the second century CE. With the third century, however, there are some changes, with a decrease in the number of sites attested. With the exception of the surroundings of Rovigo and Crispino, whose survey data indicate that most sites were abandoned completely between the second and the third centuries CE, this decrease is not very large. Before discussing possible interpretation of the phenomena behind these data, it is necessary to briefly also consider the urban centres in this region.

*Urban Centres in Cisalpine Gaul*

As remarked by Marco Maiuro in a recent study, Roman northern Italy represents a 'serious contradiction between economic models that predict a positive correlation between

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urbanization rates and agrarian outputs and the empirically tested economic condition of Roman northern Italy' (Maiuro 2017, 99). Contrary to such tenet, in this region the urban centres are small and relatively sparse: in the early first century CE, the whole of Cisalpine Gaul had only 75 or 76 urban centres (*municipia* or *coloniae*) out of the c.360 towns for peninsular Italy (De Ligt 2012, 204; Maiuro 2017, 106). Yet, the territory was relatively large and, from an agricultural point of view, very suitable to arable agriculture. Roman Cisalpine territory measured about 12 million ha, that is ca. 47% of the total territory of Roman Italy (Maiuro 2017, 105). Cisalpine Gaul appears to have had low urbanization rates, but relatively high agrarian outputs. Maiuro puts emphasis on the fact that out of c.12 million ha that Italy has, located at an elevation below 600 m and hence suitable for arable agriculture, c.6.6 million ha are in the Cisalpine region and that 'as much as 70% of the lowland areas of Italy are located in Cisalpine' (Maiuro 2017, 106). While these geographical data speak of the agricultural potential of the region and do not necessarily reflect the actual productivity in Roman times, the intensive centuriation grids known from various parts of Cisalpine Gaul and the field survey data, consistently showing a capillary occupation of the rural territory by farms and villas peaking in the first century CE, plausibly suggest that the agricultural output of the region was high.

De Ligt, in studying the urban system of Roman Northern Italy, has suggested that the rank-size distribution of these cities in early imperial period reflects the existence of a 'modular' urban system of self-governing cities. Such system would have offered little scope for the concentration of resources and people in a small number of very large regional cities, be it through political dominance or through free market operations (De Ligt 2016).[12] While most towns in Cisalpine Gaul show, in the first century CE, investment in their 'monumental overhead', receiving the 'standard kit' of Roman urban amenities— capitolium, forum, basilica, baths, etc.— they did not considerably grow in size as consequence of the more intense agricultural exploitation of their territories. What happened in towns in the third century, when we have seen that there is a drop in the number of rural sites?

Data from several urban centres in the area reveal a common phenomenon for the third century CE. Forum Popilii (modern Forlimpopoli), c.8 km to the south-east of

[12] See also De Ligt (2017) and the criticism in Kron (2017).



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Forlì, can be taken as exem- plificative.[13] In this urban centre, several of the *domus* excavated present signs of violent destruction in the third century CE; even when no signs of destruction were detected, no evidence for restorations and mainte- nance work is present in pre-existing urban houses (Graziani 2010, 25; 52). These houses just seem to have been abandoned during the course of the third century, a phenomenon that has been observed elsewhere in towns of the Emilia Romagna region (Ortalli 2003, 98).[14] Even when a town house is rebuilt after violent destruction, it is after a considerable hiatus, as in the case of the large house investigated in Piazza Ferrara in Rimini.[15] To this picture pertaining urban habitation, one can add the information about production activities coming from excavations in the suburban area of Forum Popilii. In most of the territory around this settlement, pottery kilns, largely producing flat-bottomed wine amphorae of the type known as Forlimpopoli, but also tiles and bricks, have been identified. The production of amphorae at Forum Popilii, which seems to have lasted from the first century CE to the end of the second century CE, reached high volumes. For instance, in the eastern Veneto region, 2/3 of the second-century CE amphorae discovered came from Forum Popilii. It has been suggested that such amphora production largely exceeded local needs and that it was meant for extra-regional markets, reached via Ravenna's port of Classe, to which Forum Popilii's *suburbium* was connected via a good road network (Morigi 2010, 204). The idea of exporting empty amphorae to serve transmarine markets, which is, if I understand it correctly, what Morigi suggested, does not make sense, even in a scenario of return cargo used as ballast. Archaeology has documented many cases of building material from *figlinae* being used as ballast on return shipments (e.g. brick and tiles manufactured in Italy found in North Africa or Spain), but empty amphorae seem an impractical return cargo with too little margin opportunities to justify their transport from Forum Popilii to Classe and from there to overseas destinations. May not the amphorae have actually carried wine? This would mean a higher productive potential for the viticulture in the region than it has been allowed for. If for the sake of the argument, we run with this hypothesis, what causes could we posit to explain the decrease in rural sites, the

[13] *Fora* were not proper urban centres, but a number of *fora* in this region, such as Forum Popilii, Forum Livii, Forum Cornelii, Forum Iulii, etc., received municipal status when Cisalpine Gaul was annexed to Italy in 42/41 BCE. Even if these centres were at best just 'micro-cities' (Maiuro 2017, 106), the status of *municipium* made them 'proper cities' from a juridical point of view.
[14] See also other contributions in Ortalli and Heinzelmann (2003).
[15] A Roman *domus* was destroyed in the third century; in the late fourth/early fifth a new, large house, richly decorated, was built on this spot: Negrelli (2017, 437).



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destruction/abandonment of houses in urban centres *and* the cessation of the wine-amphora production?

*Interpreting the Data*

Scholars have explained the diminishing number of rural sites observed in the third century CE in the areas of Cisalpine Gaul discussed above in a number of ways: climate change; low competitiveness of the agricultural products of the region against products from other markets; impoverishment of the soil; and a drop in the available human and productive resources (Toniolo 2000). The absence in the third century, regionally and trans-regionally, of locally produced items such as amphorae, tiles, and terra sigillata is noted by Toniolo too; she observes:

> sembra quasi che sia venuta a mancare (per cause naturali?) la materia prima per poter continuare a tenere in funzione gli ateliers; non ci si riferisce solo alle furniture di argilla, ma anche al combustibile (…). (Toniolo 2000, 91)

If the geo-archaeological studies that have reconstructed, for the first century and most of the second century CE, favourable climatic and geological conditions in the area south of Padova are correct, the decline in number of sites in the third century could have a climatic reason.[16] It has been observed that the eastern Mediterranean and western Mediterranean are, from a climatic point of view, opposites; if the east experienced drought, the west had wet weather and vice versa (Manning 2013, 111–112; McCormick et al. 2012). Recent studies have also presented data indicating that in the second century CE regions of the eastern Mediterranean experienced sustained drought conditions, which should then mean that in the west conditions got wetter.[17] It does seem that broader cooling and climatic instability occurred in the Western provinces from the late second century CE up to c.400 CE (McCormick 2013, 70).

[16] On the complex issues related to climatic studies and the difficulties in obtaining coherent high-resolution reconstructions, see Manning (2013).
[17] Jongman (2012) notes, however, that tree rings from Central Europe indicate possible drought conditions for the years preceding the Antonine Plague.



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Considering the delicate equilibrium between land and water in the eastern Cisalpine region, which required constant maintenance of drainage channels and other infrastructure, if such wetter weather occurred, then it is likely that it created more unstable river flow conditions, making the upkeep of the drainage works more demanding and difficult.[18] Those rural sites that were settled in the Augustan period in the low-lying areas closer to the marshes would be the one to have suffered from these, hypothetical, more unstable hydrogeological conditions. Wetter climate, if the increase was substantial, may also mean climatic conditions less favourable to viticulture, or at least less favourable to the production of good-quality wines for export,[19] and this *could* be linked to the disappearance of the wine-amphora production. In this scenario, one would posit that several of the rural sites that continued to be occupied moved away from viticulture, choosing other types of cultivations. The large villa sites, which, as mentioned earlier, show a continuous occupation until late antiquity, would have been the most successful in changing their production strategies.

An increase in marshland and humid areas and a decrease in the range of plants and trees cultivated from the third century CE onwards is also suggested for the plains around Bologna. A recent overview of environmental conditions and agriculture in the Padana valley in the Roman period on the basis of archaeobotanical data notes that in the plains of Bologna, during the third and fourth century CE, signs of 'regression' in agricultural exploitation appear: the percentage of both pollen and carpological remains that can be connected to anthropic action decrease, due to a general drop of the cultivated taxa attested (Marchesini and Marvelli 2017).[20] The well-attested presence of plants of the cichorioideae family may indicate the presence of uncultivated areas, while the percentual increase in the presence of hygro-hydrophile plants strongly suggests the presence of

[18] It is believed that already in the Republican period the mouth of the Po had advanced c.13 km past Spina as a result of the draining of marshes and centuriation of the plain of Cisalpine Gaul of the second century BCE: Maiuro (2017, 114).

[19] As we have seen above, the study of Mutina's archaeobotanical data by Bosi et al. (2019) does not suggest a cessation of vine cultivation in the period for which the authors of the study hypothesize more unstable and wetter climatic conditions. It is also worth remembering the oft-quoted testimony of Strabo (5.1.7) about viticulture in the marshes around Ravenna: the vines are said to have grown and fruited quickly and in abundance, but to have then died within four or five years.

[20] Seeds/fruits are in this period 13% vs 47% for the first- to second-century period; cereals, on average, consist in only 3% vs 6% for the earlier phase. It has to be noted that the authors of this overview do not indicate the number of sites and samples considered for each period, so one has to trust them that such decline is real and not the effect of a smaller sample size.



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marshland. In some individual cases, such as the site of S. Vitale, 50% of the finds are from this category of plants.

However, while the evidence for the expansion of humid areas continues in the fifth and sixth centuries CE, these authors report that the grape vine is well attested, a datum that goes against the hypothesis that wetter conditions may have not been favourable to the cultivation of the grape. Evidence for possible wetter conditions is known from other Western provinces; in France, in the Tricastin region near the Rhone, where intensive viticulture developed in the early Roman imperial period, drainage channels associated with vine cultivation were filled in sometime in the second century CE and pollen analysis indicated a move from vineyards to meadows, which might point to animal husbandry replacing viticulture (Marzano 2013, 115). Other possible reasons put forward to explain the decline in viticulture in the Rhone Valley have included the idea that there was a decrease in the availability of qualified manpower as a consequence of a significant lowering of population caused by the Antonine Plague (Brun 2005, 73).[21]

As far as other parts of Italy are concerned, important geo- archaeological surveys have been carried out in the excavation of the ancient port of Neapolis, and further south at Paestum and Velia, allowing definition of the landscape evolution of these different geographical areas (Amato et al. 2012). In all three cases, evidence for geomorphological changes (e.g. appearance of sand bars, formation of coastal lagoons, progressive silting of these lagoons, floods and ground-level aggradation) was identified starting from the third/fourth century CE. These studies strongly suggested that the changes were not due to climatic deterioration, but rather due to the socio-economic decline which affected the Roman Empire during this period, with, *inter alia*, the breakdown of urban life, soil erosion due to reduced maintenance of farmland and deforestation of slopes. In this case, the interpretation of the data puts much more emphasis on direct human agency in explaining the changes seen in the landscape than on climate change.

Regards the archaeological data from eastern Cisalpine Gaul discussed here, other explanations are possible and climate change alone certainly does not explain the destruction layers observed in the towns of the region. Furthermore, cessation in the

[21] In other parts of France, such as in Languedoc, viticulture continued. On the different pictures emerging from archaeological data from different parts of Gaul(s) see Esmonde Cleary (2013, 66–73; 107–112; 201–206, on Trier) (referenced in Erdkamp 2019, 426, footnote).



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production of wine amphorae does not necessarily mean cessation in wine production; generally speaking, amphorae were the container of choice when transporting foodstuffs overseas and the flat-bottomed Forlimpopoli amphora was mainly used to transport the wine on barges along waterways. But other containers— skins and barrels—were used too, although these do not often survive in the archaeological record (Marliere 2002). However, we now know that barrels became much more common during the imperial era, and already many years ago Tchernia pointed out that the apparent crisis in the production of wine in certain Italian regions as deduced from the scarcity of amphora finds may in fact simply indicate a shift from amphora to barrels (Tchernia 1986, 285–292). The only problem with such an explanation in the case of the kilns of Forum Popilii and other centres of the region is that it seems that also local production of fine-ware pottery, tiles and bricks ceased. It is because of this that Toniolo talks of the impression that the cause of the halted production was a lack in raw material—the clay and fuel.

Rural veteran settlements in the areas I have been discussing prob- ably experienced the same phenomenon observed in other regions of the empire with large settlements of veteran colonists, such as parts of modern France: after two generations or so, the tendency is towards concentration of property into the hands of fewer landowners, with enlarged production facilities at a few larger villa sites serving more than one estate, while other, smaller villa sites were 'abandoned' (Marzano 2013, 2015).

The signs of destruction detected in urban houses of several towns of Emilia for the third century CE horizon should be connected with the invasion of the Iutungi, who invaded Italy in the second half of the third century CE.[22] In 270 CE, Aurelian's troops were defeated in the battle of Placentia, and the Iutungi advanced along the Adriatic coast until they were later defeated at Fanum and Pavia.[23] The unstable times are also attested by several coin hoards discovered in northern Italy, whose depo- sition date can be placed between the reign of Gallienus (260–268 CE) and the start of Aurelian's reign (270–275 CE) (Cardarelli and Malnati 2006, 92).[24] These invasions must have had an impact also on the rural settlements of the areas affected, on their economic activity and the avail- ability of

[22] Desippus, *Scythica*, fr. 7 = *FGrHist* 100.

[23] *Scriptores Historiae Augustae*, *Aurel.*, 21.1–3; 18.4; 19.4; Aurelius Victor, *De Vita et Moribus Imperatorum Romanorum*, 35.2.

[24] The province of Modena was possibly spared by these invasions, since no coin hoards dating to this period were found there.



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tradeable surplus, but it is not possible to determine this with certainty. After the third century, when Ravenna became capital of the Roman Western Empire first (from 402 to 476 CE) and of the Ostrogothic kingdom later, the presence of the imperial court must have given a new economic impetus to the region. Although it is not possible, within the limits posed by this chapter, to analyse this later period in detail, I note that this is a time when several rural 'palaces' for the emperor and notables of the court appear around Ravenna (Brogiolo and Chavarria Arnau 2018). The presence of the imperial court at Ravenna must have had clear consequences on landownership in the region and on investment in infrastructure beyond the new city-wall circuit that, in the fourth or fifth century CE, enclosed an area of c.166 ha (Maioli 2000).

Overall, it seems that after a considerable increase in land occupation, the unstable situation in the region in the third century, affected by barbaric invasions and military operations, caused some changes in the map of landownership, with the emergence of larger estates, possibly focusing on agricultural production other than wine, and the abandon- ment of some areas, with a slow return to woods. Climate change may have contributed to the new picture insofar as irregular weather pattern may have caused more unstable geological conditions in littoral and low- lying areas, making the upkeep of drainage channels and other land reclamation infrastructure difficult to maintain. However, there is no incontrovertible data linking the climatic conditions of northern Italy in the third century CE to the changes detected in rural settlements. Much of what the archaeobotanical data suggest could also have been caused by the abandonment of the land and upkeep of the agricultural infrastructure due to profound societal changes. To say it with Erdkamp, '(t)he point is not that there is no link between climate and society, but that we should avoid easy assumptions about causal links between the two'.[25]

As this overview of the situation in parts of Cisalpine Gaul shows, the data available generate more questions than answers. It is fair to say, however, that the contraction, in some areas, in the number of rural settlements in the third century CE is evident only because of the *considerable* increase in their number in the first and second centuries. It is only in the sixth century, with the Byzantine-Ostrogothic wars and, later, the occupation of Ravenna by the Byzantine general Belisarius in 540 CE, that most rural sites in the region disappear and new forms of settlement appear in the countryside.

[25] Erdkamp (2019, 431).



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## ETRURIA

In my second case study, I focus on the modern region of Tuscany, which largely corresponds to the northern and central portion of the Augustan region of Etruria (south Etruria corresponds to the northern portion of modern Lazio). As I have observed years ago, there is a discernible difference between northern and southern Tuscany in terms of diffusion and chronology of occupation of villa sites (Marzano 2007, 199–222). Southern Tuscany was very intensively settled in the Roman period, and many villas (and farms) are archaeologically known. In the north, on the contrary, there were considerably fewer villas, with a clear preponderance of small and medium-sized farms.

During the course of the second century CE, a number of villa sites in southern Tuscany, most notably in the *ager Cosanus* region, show signs of decline (poor repairs, use of rooms of the residential quarters for production activities such as smelting, etc.) or of clear abandonment, as in the case of the famous villa of Settefinestre near Cosa. At this site, during the second century CE a move from large-scale wine production to grain cultivation and pig rearing was identified, followed shortly after by abandonment of the site (Carandini 1985). The discovery of some rooms that had been walled up sometime in the late second century CE was also tentatively connected with an epidemic, possibly the Antonine Plague. In the north of the region, the picture is different: the few villa sites that existed continued to be used as elite residences until late antiquity, with major refurbishment and works dated to the second century CE and later. A recent doctoral thesis on Roman villas in Tuscany has added more data and confirmed the differences in the history of villas sites in the imperial era between the northern and southern parts of the region (Chirico 2016).

Several field surveys were conducted in Tuscany, such as the survey of the *ager Lunensis* in the north of the region, of the Cecina Valley, of the province of Siena and of the *ager Cosanus* and Albegna Valley in the south.[26] In the past, the prevalent interpretation linked the archaeo- logical data from the south of the region with the socio-political history of Republican Rome emerging from ancient historiographical sources.[27] In the Republican period, wealthy landlords acquired more land, dispossessing small and medium-sized landowners, and created large villa estates employing slave labour, producing wine as cash crop largely for export overseas. Farms decreased and 'plantation-like' estates

[26] Overviews in Launaro (2011, 110–113; 115; 117–119), with previous bibliography.
[27] For example, Plut., *Ti. Gracch*. 8; cf. Wilson (2004).



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emerged. With the imperial period, competition from provincial territories (e.g. Hispania; Gaul), where Italic settlers had started large-scale viticulture, alongside a decrease in the availability of slaves on the market due to the cessation of large military campaigns and acquisition of new territories, would have caused a crisis for many Italian villa estates.

This traditional interpretation has been questioned by a number of scholars, and it is now recognized that: (a) the appearance of large villas in an area did not necessarily mean the disappearance of farms; (b) Italian wine producers did not experience a generalized economic crisis in the imperial period due to competition from the provinces; and (c) the signs of poor repairs and repurposing of elegant rooms of the *pars urbana* for artisanal activities at many villa sites can be explained with changes in ownership and consolidation of property holdings in the hands of a smaller number of owners (the most important of whom was the emperor himself), rather than with the abandonment of the villa to squatters.[28]

Also, the idea of a mutually exclusive relationship between villas and farms has been reassessed. A comparison of the results of the various field surveys carried out by Alessandro Launaro has revealed that, with the exception of the territory of Cosa, where the appearance of large villas is connected with the decrease in the number of farms, elsewhere villas and farms increase or diminish in tandem. As observed by Launaro, '81% of those surveys which witnessed the growth of "villas" (…) did not experience any decline in "farms" (…)' (Launaro 2011, 166). There are no sharp differences in the same areas between the occupational history of hierarchically different types of rural settlements, but there are overall differences between the north and south of the region.

As far as agricultural production is concerned, viticulture is well attested in northern Tuscany as early as the third century BCE. Amphora kilns producing Graeco-Italic and Dressel 1 amphorae are known in the territory of Pisae and Volaterrae. Later, these same kilns produced also Dressel 2–4 amphorae and continued to be operational until the fourth and fifth centuries CE (Tchernia 2006, 146–147). Thus, here, in territories that are only c.100 km to the north of the *ager Cosanus* and on the other side of the Apennines from Forum Popilii discussed above, wine production and rural villa occupation did not appear to have had any major disruption.

[28] Marzano (2005, 2007), Tchernia (2006), and Maiuro (2012).



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*Urban Centres in Etruria*

Another important element in explaining the differences in villa settlements between northern and southern Tuscany is the different level of urbanization. Villas were strongly connected with towns, not simply in terms of the 'landscape of production' but also because these were the places in which both local notables and aristocratic landowners (who may or may not have local origins) displayed their social standing to their visitors and to the nearby civic community.

By the end of the Republic and the early imperial periods, central Italy, together with Campania, had the highest concentration of urban centres of the peninsula, with average inter-city distance of c.11/12 km (Bekker-Nielsen 1989). Many of these were small towns, covering 20 ha or less (De Ligt 2012). The level of urbanization found in these regions goes hand in hand with the frequency of rural settlements in these same regions, in particular with the presence and continued existence of villas and farms. A symbiotic relationship existed between towns and villas, in terms of production (e.g. supplying urban markets with fresh products; Morley 1996), but also in terms of social interactions, which in turn affected the degree of sophistication of the architecture and décor of the residential parts of villas (Marzano 2007, 176–198). On the contrary, Northern Tuscany had only a handful of urban centres, scattered in the territory: Pisae (30 ha); Luca (38 ha); Arretium (50 ha); Clusium (at the border between Etruria and Umbria, 28 ha); Volaterra (30 ha); Florentia (23 ha); and Sena (18 ha).

Since the early Julio-Claudian period, when euergetic building in the city of Rome became the prerogative of the emperor and his immediate associates, precluding senatorial families from this traditional form of display of social standing, the relationship between wealthy landowners and civic communities became closer. During the first and second centuries CE, rich villa owners who had properties nearby largely paid for the erection or restoration of public buildings in the towns of Italy. The acquisition of some of these properties by the emperor could have an effect on the urban life of nearby towns. The emperor, having great financial resources at his disposal, could undertake very large projects, as was the case with Augustus, who owned several villas and other properties in Campania, and the construction of the Serino aqueduct. But if the emperor did not regularly visit an area and the locals were not successful in reaching out to him

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(via intercessions on the part of a patron, someone closer to the court, etc.), towns could lose out in terms of bene- factions. Cosa, at the centre of several imperial properties, was the object of various imperial benefactions that tried to revitalize the moribund little town down to Aurelian's reign in the third century CE (Fentress 2003). As mentioned at the start of this chapter, from the mid-third century CE in Italy both the amount and quality of building activity aimed at the maintenance of the urban monumental fabric diminished. Since for several towns we lack excavation data about the diachronic development of their public buildings and monumental centres, commemorative and honorific inscriptions offer an indication of building activity and attention paid to restorations. Recent research has investigated the degree to which a change in epigraphic and honorific statuary habits started in the third century, thus affecting the number of inscriptions for this period (Machado 2010). A preliminary study of third- and fourth-century public inscriptions from Campania does not seem to indicate changes in the epigraphic habit per se, but rather in the capital and energy spent to maintain public buildings (Camodeca 2010). One of the issues that certainly affected maintenance of the monumental apparatus of Italian towns in this later imperial period is the fact that municipal finances were placed under the direct control of the imperial administration from the third century CE on. Of course, this does not exclude other possible reasons for the phenomenon, such as difficulties in finding skilled manpower. However, it seems to me that removing finances from the control of the local city councils, at a time when fiscal pressure on the wealthy was increasing and the political structure was drastically changing (and therefore the incentives to the earlier type of 'urban' euergetism were diminishing) must have had important consequences.

*Discussion*

The difference in the occupational history between villa sites documented in southern and in northern Tuscany is explained by Chirico (2016) with the distribution of properties belonging to the emperor. In southern Tuscany, by the second century CE, many properties had become imperial property, as attested by epigraphic and historical sources, whereas in the north ownership on the part of senatorial families continued. These aristocratic families continued to have a political and economic role regionally and invested to maintain their properties at a level adequate to their social standing. On the contrary, in the case of the emperor, who ended up owning many properties that he did not visit regularly, keeping up and upgrading, according to the fashion of the times, the elegant residential quarters were

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not a priority. Owning more than one property in the same area inevitably brings someone to consider how to best administer them. For Chirico, moving from viticulture to grain cultivation and pig rearing, as observed at Settefinestre once the property entered the imperial *fiscus*, meant choosing low-cost productions aimed at supplying Rome (Chirico 2016, 208). While I do not fully agree with the idea that production from imperial estates was meant to supply the population in the capital (rather, it is more likely that it was meant for the imperial court), the diffusion of imperial ownership is undeniably an important factor in explaining the difference between the trajectory observed in the north and that of the south of the region. It is to my mind inevitable to think that such different patterns in occupation were the result not of general demographic decline and/or of an economic crisis in wine production, but of different types of ownership. Indeed, several maritime villas and their ports in the *ager Cosanus* and on Giglio Island that became imperial properties, while no longer kept up as luxurious residences, became important mediation points for inland distribution of goods coming from North Africa, where in the second century CE large imperial estates were created on the highlands of Numidia. These coastal villas were, and continued to be until late antiquity, on the sailing route that coming from North Africa reached Italy via Sardinia. One point about the dataset assembled by Chirico needs stressing: there is a considerable difference in the number of villas known in the two parts of the region. The modern province of Grosseto, with its 95 villa sites, has the highest concentration and it is not that surprising then to see that it is in this area that several villas do not show signs of occupation after the second century CE: consolidation of landholdings is more likely to occur where there were originally a higher number of owners and estates.

As we have seen, the history of wine production in the north and south of Tuscany in the post-second century CE period follows different trajectories. The viticulture for export attested for the *ager Cosanus,* from where the amphorae stamped *SES* found at many sites in Gaul had originated in the late Republican period,[29] may have come to an end with a shift towards cereal cultivation and animal rearing, but this is not what happened in northern Tuscany. If one accepts that the Roman Climate Optimum came to end in the early third century, causing unstable precipitations and colder climate, and that this may have affected the wine production of eastern Cisalpine Gaul, this does not seem to have applied to

[29] These amphorae are attributed to the senatorial *gens* of the Sestii, whom Cicero mentions as having properties in the *ager Cosanus* (Cic., *Att*. 15.27.1) and may have owned the Settefinestre villa. See Manacorda (1981).



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northern Tuscany: wine production continued overall uninterrupted. On the basis of the available evidence, then, particular socio-economic circumstances seem to have determined the divergent paths followed by north and south Tuscany, in particular the presence of imperial estates.

## CONCLUSIONS

This paper has discussed some of the trends in rural settlement patterns and in urban life as recorded by archaeology in two case- study areas: south-eastern Cisalpine Gaul and Etruria. These two regions are, geographically, very different. The Bassa Modenese and the territory circumscribed by Padova, Adria and Rovigo are alluvial plains with several major rivers and a network of secondary waterways; the area has coastal marshes and lagoons whose morphology has changed through the centuries due to both natural and anthropic processes. This fertile land, suitable to arable agriculture, is also hydrogeologically unstable, particularly in its low-lying portions. Tuscany, a larger area than that of the first case study, has a more varied landscape: rolling hills, few plains, the Alpi Apuane in the north, famous for the Luna/Carrara marble, and marshland and coastal lagoons in the Maremma and Orbetello area in the south.

In both case-study areas, by the first century CE the countryside was densely settled with villas and farms. However, while it is possible to talk, on average, of a decrease in the number of sites attested for the third century, when the data are disaggregated and examined area by area, differences emerge. In the Bassa Modenese, only few sites ceased to be occupied in the third century, but around Rovigo and Crispino the majority of the sites was abandoned in this period. In Tuscany, several villas in the south are no longer kept up as elite residences after the second century CE, but in the north all the (few) large villas attested continue to be restored and embellished until late antiquity.

In the example discussed above, what the archaeological data show can often be explained with social changes, as in the case of the imperial acquisitions that seems to determine the fate of the large villas of southern Tuscany. In other instances, it is more difficult to offer a clear answer. The case of the kilns around Forum Popilii and nearby areas, which stop production at the end of the second century CE, is such an instance. Different causes can be posited to explain the phenomenon: disrupted trade networks, a drop in demand, the difficulty in finding fuel (deforestation) or, simply, the preference for barrels

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as the container of choice and the availability on regional markets of tableware produced elsewhere. Already years ago, studies on ancient climate have suggested that at the end of the Roman Empire cooler climate and greater humidity, together with hydrogeological imbalance, occurred (Stefani and Vincenzi 2005). Localized studies like the one I have discussed on Mutina or the overview for the Bologna plains do seem to suggest a degree of climatic change in late antiquity, which affected the local environment, but do not seem to have completely disrupted the core agricultural production (the cultivation of the grape vine and the olive) and animal husbandry (sheep rearing). The reduced variety in the type and range of fruits and herbs these archaeobotanical studies have noted is better explained as the result of disruption in the supply–demand mechanism and the breakdown of the system of economic exchange based on the city, rather than with climate change.

If there is one clear conclusion, then, to be drawn from this overview is that we have a number of micro-regional histories. Diversity and complexity differentiate every one of these micro-regions. It is there- fore difficult to reconstruct general historical trends for the entire Italian peninsula without over-simplifying issues and processes. Climate change may have played a plausible role when considering areas particularly exposed to the consequences of subtle changes, such as the low-lying and hydrological unstable lands of eastern Cisalpine Gaul. But from an archaeological point of view, the end of the Roman Climatic Optimum does not seem to have had a clear effect everywhere in Italy. Neighbouring regions show very different trajectories and, while it is true that Italy has many micro-climates, so climate change would have not manifested itself in the same way everywhere, historical and social changes, and the impact of human activities onto the landscape are much clearer to detect.

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