Rural Transformations in Middle Republican Central Italy

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7 Rural Transformations in Middle Republican Central Italy

An Archaeological Perspective

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7.1 Introduction

The period between the conquest of Veii in 396 and the outbreak of the Second Punic War in 218 was a crucial phase in the establishment of Roman hegemony. With the submission of various mountain peoples and the settlement with the Latins in 338, the conclusion of the Samnite Wars in 290, the subjugation of Etruscans and Gauls after 308 and 283 respectively and, finally, the capture of Tarentum in 272, this period witnessed the affirmation of Roman power over the Italian Peninsula, while it also saw the renewed rise of Rome on an international stage and the start of Rome's expansion overseas.[1]

In this context, profound changes occurred in the rural landscapes of Central Italy. The increasing scale and duration of warfare put a major strain on rural manpower and involved the large-scale plundering and scorching of rural areas. Moreover, in this pre-industrial setting, the economy largely depended on agricultural surpluses, which were therefore crucial to sustain the growing population of Rome and warfare, as Rosenstein's contribution to this volume also stresses (Chapter 4).[2] Finally, the Licinio-Sextian Laws of 367, intended to resolve the increasing social tensions at Rome ("the Struggle of the Orders") that arose from growing social, economic, and political inequality between patricians and plebeians, imply fundamental changes of land ownership: while "gentilicial land" was previously controlled by clan leaders, these reforms represented a new legal framework in which land was either public or private. Plebeian small farmers now obtained the social and legal position to privately own land. At the same time their independent position was far from secure: they were under constant risk of becoming bonded by debt and losing their land to elites, who may also have started to employ slave labor on their agricultural estates.[3]

[1] All dates are BCE. For the historical narrative: Cornell 2008; Raaflaub 2010. On treaties with Carthage and early expeditions to Sardinia and Corsica, Bradley 2008: 45; Stek 2018: 154 with references.

[2] On *tributum* as a means to collect these surpluses: Tan in this volume (Chapter 3). For the nature of warfare and its impact on the countryside: Erdkamp 2010; Attema 2000.

[3] Roselaar 2010: ch. 2; Capogrossi Colognesi 2012; Scheidel in this volume (Chapter 5).

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Thus, the Middle Republican period, here roughly defined as the (mid-) fourth to third century, was a highly dynamic period – in terms of historical events, of economic and demographic change, and of underlying sociopolitical processes. The interplay of these events and processes must have had a profound impact on the countryside and implies major changes in the settlement and exploitation of the rural landscapes of central Tyrrhenian Italy (Figure 7.1).[4]

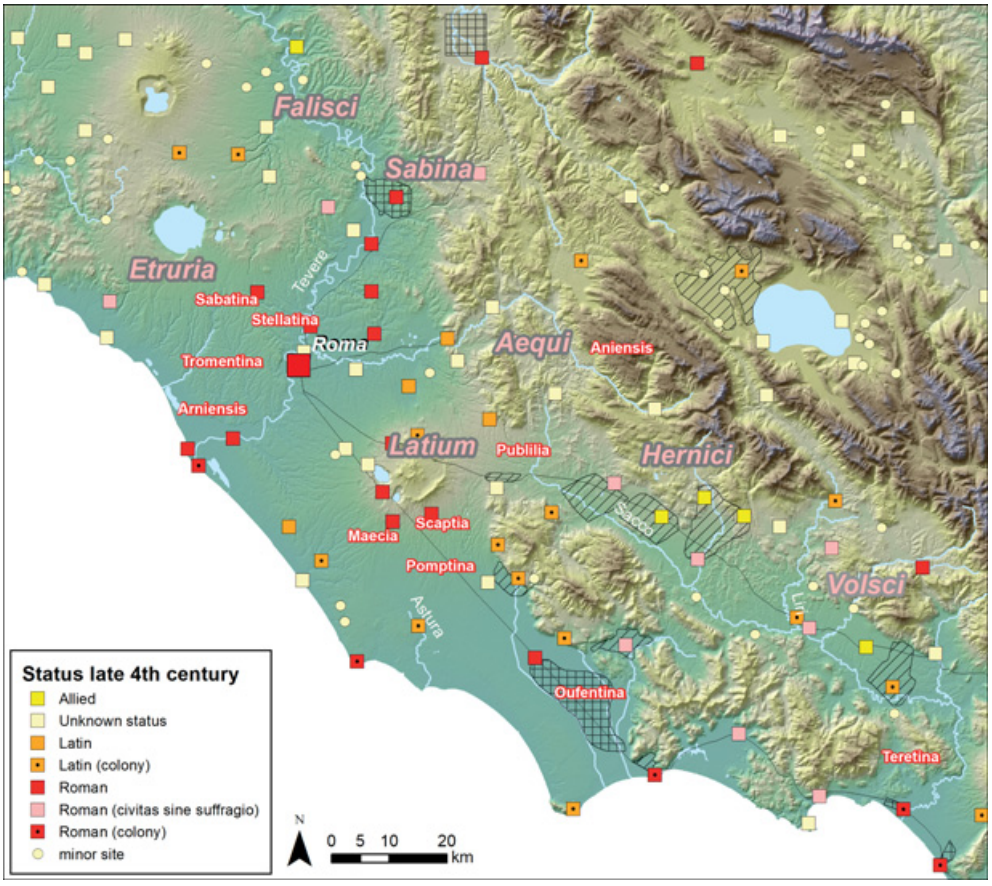

Figure 7.1 The sociopolitical landscape of Central Tyrrhenian Italy in the late fourth century. Drawn by the author.*

* For the administrative status of towns as displayed in Figure 7.1: Beloch 1926: map 2, complemented by *RE* online; Stillwell et al. 1976; Hornblower and Spawforth 2005; Cornell 2008, whom I have followed in assuming that some sites believed to be *civitates sine suffragio* by Beloch had full citizenship. For locating rural tribes: Ross Taylor 1960, with updates in Richardson 2007, and Linderski 2013.

[4] Terrenato 2007.

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Archaeologically, this impact is not easy to detect: While excavations give detailed information on specific sites, they provide keyholes into rural history that cannot be considered representative for broader regional developments. In this sense, regional field surveys offer a more useful line of evidence, as they provide rural settlement data from different regions and historical contexts, both in Rome's direct surroundings and in still-contested areas at greater distances; such data therefore allow assessing changes in rural landscapes at a much larger scale, but without ignoring possible local variability. However, these data also come with limitations: They lack stratigraphic context, and the local and regional settlement patterns and trends they provide therefore have a limited chronological resolution – usually of one or more centuries. Moreover, such trends are the product of both demographic and economic processes, and growing or declining site numbers may thus to some undefined extent reflect either real changes in population or changes in consumption practices, or both (sites become more visible as more pottery is used). Finally, the interpretation of ceramic surface scatters, which are often palimpsests of human activities spanning centuries (if not millennia), remains a challenge. For these reasons it should be clear that one can indeed only rarely relate increases in rural settlement to short-term history (e.g. phases of conquest and colonization) or interpret changes in rural site patterns and typologies in terms of land ownership.[5]

That being said, recent archaeological work has substantially improved our understanding of the early Roman countryside. Gabriele Cifani's review of excavation data provides a comprehensive idea of the range of Archaic and Early to Middle Republican rural site types in Central Italy, and the landmark excavations at the Auditorium site have highlighted the presence of elite estate centers in the country outside Rome.[6] Moreover, the exceptional wealth of archaeological survey data that has accumulated over the past decades provides an excellent source to understand general socio-economic developments in this crucial phase of Roman history.

The aim of this chapter is therefore twofold: first, to review the period's archaeological evidence for changes in rural settlement, land use, and infrastructure in central Tyrrhenian Italy; and second, to evaluate the socioeconomic implications of these changes in their broader historical context. To this end, I start out with a discussion of rural settlement

[5] Archaeology and time: Smith 1992; Foxhall 2000; Bailey 2007. On site classification: papers in Attema and Schoerner 2012. On linking settlement data and colonization events: De Haas 2011.

[6] Cifani 1998; 2002; 2008. For the Auditorium site: Carandini, D'Alessio, and Di Guiseppe 2006; Terrenato 2001.

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developments on the basis of three major survey projects (Section 7.2), which highlights both general trends and local specificities. I then proceed with a discussion of the evidence for reclamation projects from centuriations (Section 7.3). While the dating of many of these systems remains debated, it is argued that some were surely laid out in the (late) fourth and early third centuries. I discuss in more detail the centuriation in the Pontine plain to argue that these systems, in combination with major road-building projects, imply very substantial and sustained investments in the countryside. Section 7.4 then discusses the demographic, economic, and social implications of rural developments in relation to urban contexts, arguing that despite the ongoing efforts in warfare, Central Italy witnessed growth both in population and the economy, which in turn contributed to Rome´s subsequent expansion. Section 7.5 then tentatively links the observed socioeconomic developments to the ongoing historical debates on the effects of Roman expansion, the Struggle of the Orders, and changes in land ownership.

7.2 Rural Settlement Developments in Central Italy

As already suggested, there are many datasets we may draw on to reconstruct rural settlement developments: Italian topographic surveys, most prominently the *Forma Italiae* and the *Latium vetus* publications, have covered large parts of central Tyrrhenian Italy.[7] But while such inventories provide invaluable and detailed inventories of sites and associated architecture, they have not systematically collected and published ceramic data – which are crucial for a detailed diachronic analysis of changes within the period discussed here.[8] I therefore limit myself to data from three major systematic surveys: the University of Rome's Suburbium Project, which conducted field surveys in the direct surroundings north and east of Rome; the British School in Rome's South Etruria Survey (SES), later restudied within the Tiber Valley Project; and the University of Groningen's Pontine Region Project (PRP).[9]

The published quantitative data of these projects cannot be compared directly, as each of the three projects has used slightly different field

[7] www.formitaliae.it/fi/index.html. *Latium vetus* project: Quilici and Quilici Gigli 1993.

[8] Cf. Attema 2017.

[9] Suburbium Project: Carafa and Capanna 2009 and 2019. South Etruria Survey/Tiber Valley project: Potter 1979; Di Giuseppe 2018; Patterson, Di Guiseppe, and Witcher 2020. Pontine Region Project: Attema 1993; Attema, Burgers, and Van Leusen 2010; De Haas and Tol, in press.

methodologies as well as different interpretive and chronological frameworks. Thus, while Suburbium data have recently been published at a chronological resolution of fifty years, both the SES and most of the PRP surveys present settlement trends in bins of c. 150 years. These bins, in turn, are not entirely the same: Where the Middle Republic runs from 350 to 250 in the SES, it runs from 350 to 200 in the PRP. Also, where the SES includes information on settlement sites and associated artifacts only, the PRP data includes nonsettlement sites and offsite data; the Suburbium Project, finally, presents not sites but so-called topographic units, several of which may form what in the PRP or SES would be defined as a single settlement or nonsettlement site.

While these differences render any attempt at direct comparison impossible, we can compare confidently the general patterns and trends these various datasets show. That such general interpretations are compatible is suggested by current work by members of these three projects on an integration of the respective databases within the so-called Rome Hinterland Project. While this integration had at the time of writing not yet been achieved and I do not draw directly on these integrated data here, the team has been able to establish that the ceramic chronologies behind the periodizations used in the published analyses are compatible.[10] Hence, although a direct comparison of settlement trends over time is not possible, these three datasets from a methodological point of view are suitable for comparative analysis.

In selecting suitable data from these projects, I focus on those subsets for which diachronic analyses have been published with a chronological resolution suitable to evaluate the fourth and third centuries as part of longer-term developments in settlement. The areas included in my comparison represent diverse historical contexts (areas that had long been part of the *ager Romanus*, areas that were incorporated in the *ager Romanus*, areas pertaining to old Latin cities and colonies, areas controlled by new Latin colonies, and areas controlled by other allied or independent polities), and therefore allow us to evaluate to what extent broader trends and patterns relate to specific local historical or geographical contexts. In this light it is especially relevant that these projects all use 350 as a separation point in their periodizations, which allows us to roughly discern situations before and after the watershed events of the mid-fourth century (the Licinio-Sextian Laws of 367, extensive territorial reorganization in 338).

[10] Attema et al. 2022; http://comparativesurveyarchaeology.org/.

Finally, the chosen areas also represent distinct geomorphological contexts, including sections of coastal plain in south Latium, rugged limestone uplands and intermediate hills and footslopes, as well as sections of the Tiber Valley.[11] Figure 7.2 presents the study areas, which include the Northern Suburbium, the territories of Veii, Capena, and Falerii in Southern Etruria, the territory of Eretum in Sabina, the territories of Antium and Norba in south Latium, and the inner Pontine plain further to the southeast.[12] Rather than reviewing settlement developments in these areas separately, I explore developments thematically to evaluate to what extent three aspects of rural settlement correlate with different historical and/or geographical contexts:[13] first, changes in settlement numbers, which may reflect processes of settlement and population expansion and contraction; second, patterns of settlement continuity and change, which may inform us on changes in land ownership; and third, changes in site typologies, which may relate both to ownership and agricultural exploitation strategies (see also Table 7.1 for an overview). Finally, I also comment on the ceramic assemblages of sites investigated by the PRP, which point out changes in networks of exchange.

Before turning to the data, there is one important methodological issue that may affect the trends and patterns of (dis)continuity. For the Archaic period and fifth/early fourth centuries in particular, our site dating is usually based on types of coarse ware ceramics and associated fabrics, which can usually only be dated roughly, and in some cases it is unclear to which phase they should be assigned.[14] The scarcity or even lack of dated ceramics of the fifth and early fourth centuries may thus be explained in different ways: It may imply that there was no rural settlement, or that people used less pottery and are therefore archaeologically less visible.[15] Some would argue that both issues are particularly influential and render a comparative analysis of trends useless.

Both issues do indeed impose limitations on the interpretations we can attach to such analyses, but they do not render them pointless. As already suggested, for the three datasets used here, ceramics have been dated in similar ways, which means that sites have been assigned to different periods

[11] Physical geography: Stoddart 2010; Teichmann 2017.

[12] This leaves out SES surveys around Sutri and Cures Sabini, which both yielded limited quantitative data, and in the case of Cures were published with a different periodization. Surveys in the eastern Suburbium remain largely unpublished, and PRP survey data from before the year 2000 have not been processed in sufficient detail to be included.

[13] An evaluation of changing distribution patterns would yield useful additional insights (for example into patterns of continuity and change and in relations between site types), but this requires the kind of detailed spatial data integration currently being prepared within the Rome Hinterland Project.

[14] Attema et al. 2017. [15] Millett 1991.

Table 7.1 *Summary of published settlement data from the Suburbium Project, the Tiber Valley Project, and the Pontine Region Project*

Region	Area	Terrain	Context	Trends	Continuity/discontinuity	Typology	Source
Suburbium	Northern Suburbium	Hilly terrain on the Tiber Valley	*Ager Romanus* since the fifth century	Stability, slight growth in northernmost part between 400 and 350	High proportion of abandoned and newly founded sites in the first half of the fourth century, continuity in second half of the fourth century	Small sites (farms). Larger farms with more luxury ceramics from fifth century, peak in late fourth century	Carafa and Capanna 2019
South Etruria	*Ager Veiientanus*	Hilly terrain, volcanic soils	Conquered and included in *ager Romanus* in early fourth century	Modest growth after 350 (221 to 287 sites)	25% new, 40% continuity, 35% resettled after gap; 15% of pre-existing sites abandoned	Continuity on Late Republican villas suggests early villas from sixth century onwards. If correct, suggests increasing numbers after 350	Di Giuseppe 2009 and 2018
	Ager Faliscus	Hilly terrain, volcanic soils	Independent polity	Dramatic growth after 350 (46 to 131 sites)	c. 55% new, 36% continuity, 9% resettled after gap; 8% of pre-existing sites abandoned		Di Giuseppe 2009 and 2018
	Ager Capenas	Hilly terrain, volcanic soils	Conquered and included in *ager Romanus* in early fourth century	Dramatic growth after 350 (43 to 142 sites)	40% new, c. 20% continuity, c. 40% resettled;* c. 27% of pre-existing sites abandoned		Di Giuseppe 2009 and 2018
Sabina	Eretum	Hilly terrain on the Tiber Valley	Frontier area between *ager Romanus* and Sabines	Dramatic growth after 350 (17 to 52 sites)	63% new, c. 35% continuity, c. 2% resettled; c. 3% of pre-existing sites abandoned		Di Giuseppe 2009 and 2018
	Cures Sabini	Hilly terrain on the Tiber Valley	Conquered and included in the *ager Romanus* in early third century	Growth after 350 (300?)**	40% new, c. 20% continuity, c. 40% resettled; c. 2% of pre-existing sites abandoned		Di Giuseppe 2009 and 2018

South Latium	Between Antium and Satricum	Marine terraces, undulating terrain	Latin centers-of-old with renewed Latin and citizen colonies in fourth century	Growth after 350, degree dependent on reading of the data	New sites and continuity on most pre-existing sites	Abandonment of villages after 350	De Haas 2011; Tol 2012
	Norba	footslopes with mixed soils and rugged limestone uplands	Early fifth and fourth century Latin colonies	Modest growth after 350	New sites and continuity on most pre-existing sites	Rise of platform sites in (early?) third century	De Haas 2011
	Lower Pontine plain	Low-lying marsh with peaty and clayey soils	Late-fourth-century reclamation associated with tribus Oufentina (318) and Via Appia (312)	Radical growth after 350	Almost exclusively new sites	Smaller and larger farms	De Haas 2011; de Haas and Tol 2017

Prepared by the author.

* These percentages have been calculated by applying the percentages in Di Giuseppe 2009, fig. 6 to the site numbers in Di Giuseppe 2018.

** The data for Cures are quantitatively speaking very modest, and the periodization does not discern between Archaic and Early Republican/Classical sites (Di Giuseppe 2018, fig. 49).

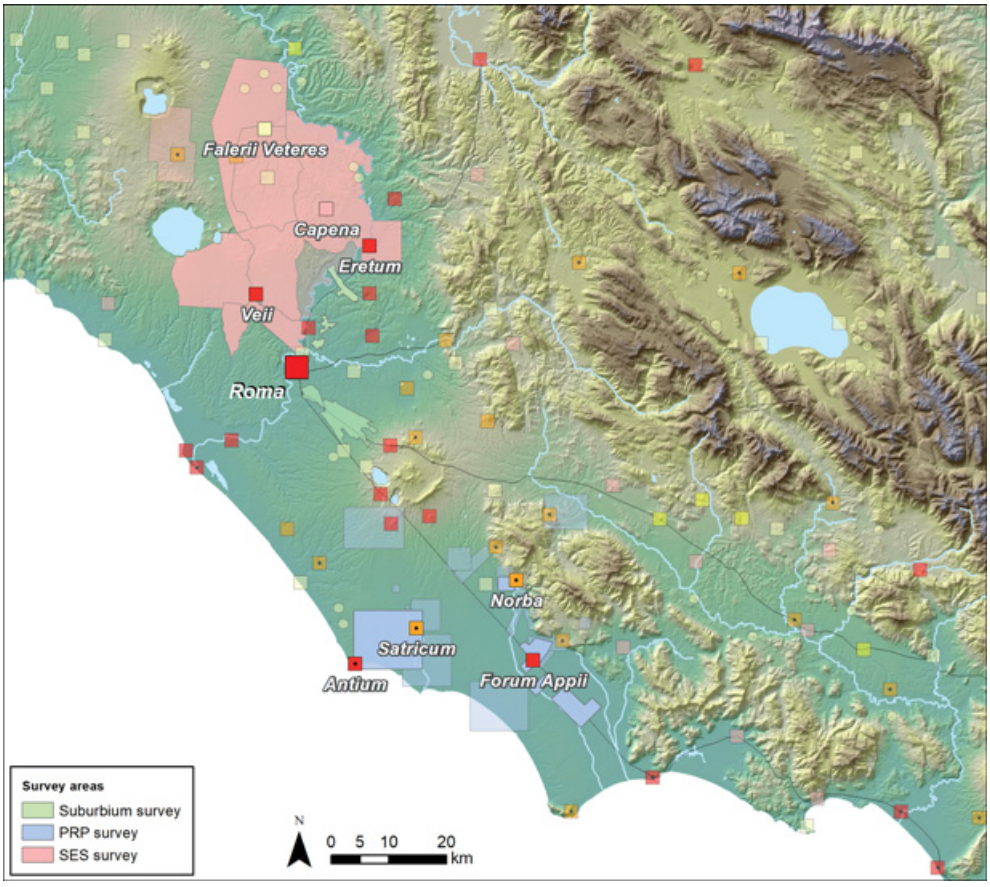

Figure 7.2 Selected survey areas from the SES, Suburbium Project, and PRP surveys. Areas marked by transparent boxes are additional survey areas of the three projects that are not considered here. For a key to the symbols, see Figure 7.1. Drawn by the author.

in comparable ways. Furthermore, all three projects have indeed identified (similar) fifth-century ceramics, which means this period is not "invisible" because of a lack of ceramic consumption. This of course leaves open whether the scarcity of such ceramics implies that there were fewer sites, or that people consumed *less* pottery; it in fact seems likely that we underestimate the actual number of sites of this period. However, as we will see, the observed changes are so clear and consistent that they cannot be explained solely by such biases in the data. In other words, the trends that will be discussed in Section 7.2.1 may exaggerate the degree to which rural settlements declined and subsequently grew, but the trends themselves are meaningful.[16]

[16] Cf. Patterson et al. 2020: 93–4.

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7.2.1 Settlement Trends

Let us start with settlement trends, which inform us on both demographic and economic developments (even if, as suggested earlier in Section 7.1, both are difficult to disentangle). Taking into account developments between the Archaic and Middle Republican period, we can discern three basic patterns (Chart 7.1).

The first main pattern can be observed in Rome's Northern Suburbium, where numbers of rural sites are stable or even gradually grow throughout the fifth and fourth centuries. While this pattern suggests a higher degree of stability in rural settlement and exploitation, this seeming continuity does hide clear ruptures: in the first half of the fifth and the first half of the fourth century, over 15 percent of the sites were abandoned, and an equal

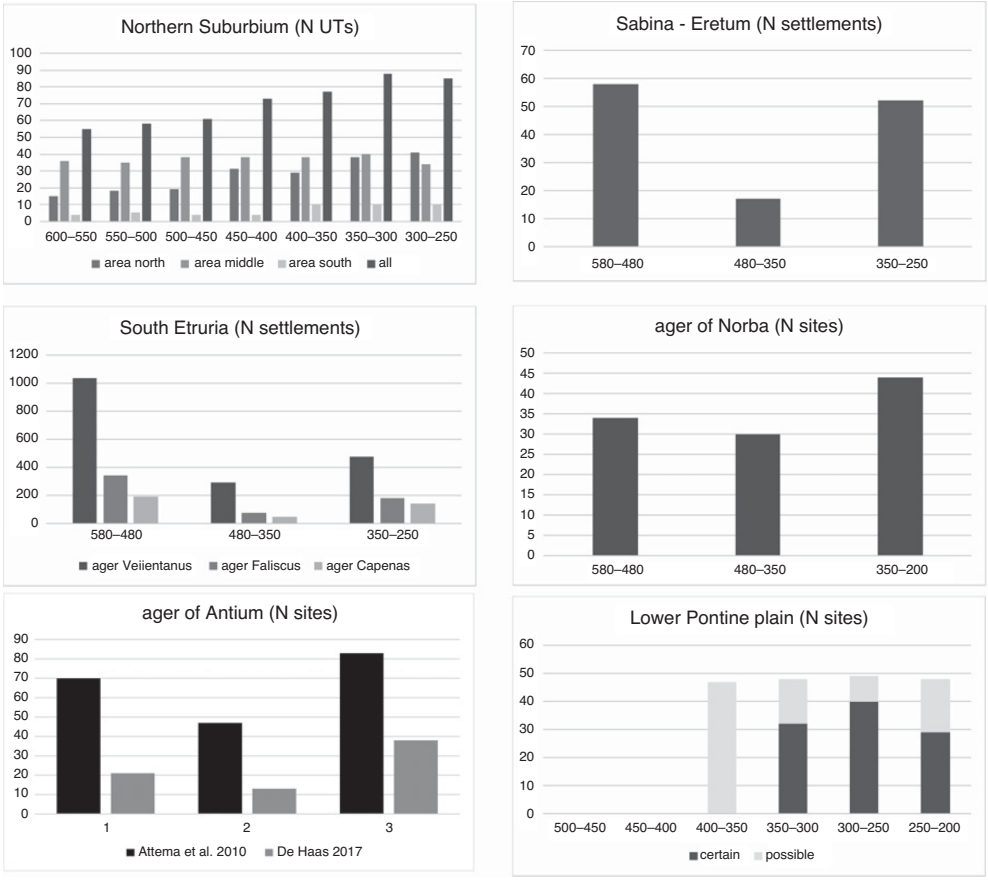

Chart 7.1 Settlement trends in different parts of Central Tyrrhenian Italy. Prepared by the author.

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percentage were newly founded.[17] Such ruptures seem to reflect the abandonment of individual farm estates and the establishment of new ones. These new estates are very similar in terms of size and remains, and thus do not indicate changes in the status and size of landholdings, but rather in the actual owners (e.g. smallholders replaced by different smallholders).

The second – and most common – pattern is characterized by relatively large numbers of rural sites in the Archaic period, a marked decline in site numbers in the fifth and early fourth centuries, and a recovery in the later fourth and third centuries. This pattern can be detected around many Archaic urban centers in south Etruria, the Sabina, and the Pontine plain. It should be noted that this pattern hides considerable local variation in the degree of continuity (with a very high degree of discontinuity around Veii and Capena, and higher degrees of continuity around Falerii, Norba, and Antium) although also here the majority of later fourth-/third-century sites were new foundations.[18]

The third and final main pattern is witnessed in the lower Pontine plain, which appears to have been colonized *ex novo* in the later fourth century (see also Section 7.2.2).[19] Such expansion into parts of the landscape that had previously not been settled can also be seen in other areas, where particular landscape zones (the coastal strip southeast of Antium, the Lepine uplands north of Norba) were now becoming more systematically settled and exploited. This pattern can also be observed in other more marginal landscapes, such as around Cures and Eretum in the Sabina, where only few rural sites existed before and a very high number of new sites were founded.

These three main patterns and the local variability they hide can only in some cases be linked directly to historical processes: Similar processes may translate into different archaeological patterns, and different processes can cause similar archaeological patterns. For example, archaeologically observed site continuity may hide changes in ownership (e.g. when a farmer could not pay his debts or sold his estate). Conversely, a historical process – colonization is a good example – may leave different archaeological patterns: an expansion of site numbers, for example around

[17] Carafa and Capanna 2019, fig. 4.

[18] Around Veii and Capena, only 40 and 30 percent respectively of the fifth-to-early-fourth century sites show continuity into the later fourth and third centuries (Di Giuseppe 2009: 443–4 and 2018: 110–12; Cf. Patterson, Di Guiseppe, and Witcher 2004: 11–13 and fig. 3). Antium/Satricum: De Haas 2011: figs. 7.5B, 7.11, and 7.15 and Tol 2012: maps 7.7 and 7.8; for Norba: De Haas 2011: figs. 9.7B, 9.13, and 9.16.

[19] De Haas 2011; Tol and De Haas 2016. This marshland was surely frequented before, but material remains are sparse and settlement contexts extremely rare.

Veii and Antium, might signal that colonists established new farms alongside pre-existing estates, but such colonists could also take over such pre-existing estates (thus leading to observed settlement continuity). Only in parts of the landscape that had been settled less densely or hardly at all before (Capena, Falerii, the Sabine area, and the lower Pontine plain), we may confidently link new settlements to an influx of colonists.[20]

That being said, the characteristics of rural site changes in the fifth and fourth centuries (reduction and expansion in site numbers, impoverishment and different degrees of continuity) surely are compatible with the general historical contexts, in which warfare and expansion – implying destruction of farms and the settling of new people – and changing social relations – dependency and debt[21] affecting patterns of land ownership – were drivers for changes in settlement patterns, but in which we may also expect a (variable) degree of continuity as local landowners were allowed to retain their land.

7.2.2 Site Typologies

The combined evidence of surveys, topographic studies, and excavations suggests that changes also occurred in terms of the types of sites in the countryside, and that these changes in turn bear witness to socioeconomic and productive changes. One such change concerns the increasing evidence for the rise of elite-controlled, and to some extent also monumental estates. Such estates existed from at least the fifth century onward, as is clearly illustrated by the aforementioned Auditorium site. Based on both the larger size and the proportions of luxury fine wares of some ceramic scatters, it has been suggested that similar estates can also be identified in the survey data for the Northern Suburbium. Such estates would equally have arisen in the fifth century, and their numbers would have grown in the second half of the fourth century, at the expense of the numbers of smaller and simpler farms.[22]

[20] The gap between the rise of these new and resettled sites in the later fourth century and the conquest of these areas in the early fourth century has been explained as reflecting a situation in which conquered land was initially turned into *ager publicus*, which was only from the second half of the fourth century onward distributed and resettled (Di Giuseppe 2018, 122 with references). This 'diffuse' model of rural changes seems to align well with the flexible agendas and strategies Rome would, according to some recent studies, have followed (Stek 2017; Terrenato 2019).

[21] Cf. Tan in Chapter 3 on the role of *tributum* in potentially exacerbating debt issues.

[22] Carafa and Capanna 2019, who consider sites over 1,000 m^2 and with more than 4 percent fine wares in their assemblages to be such larger elite estates. While not unlikely in light of what we know from the excavated Auditorium site and a few other cases, this hypothesis does require further support through ground-truthing.

Using a different line of argument, Di Giuseppe has suggested that elite estates were also quite common in south Etruria. She has observed that sites that became villas in Late Republican times show a higher degree of continuity between the Archaic and Late Republican times than simpler farm sites. Without suggesting a direct typological or architectural continuity, she argues that these locations did represent relatively large and high-status rural sites in earlier periods. If correct, this would also suggest a considerable increase in the numbers of elite rural estates after 350 for south Etruria (and perhaps the Sabina).[23]

For south Latium, yet other archaeological indicators attest to changes in rural site typologies. For example, both in the area around Satricum and in the Lepine uplands, nucleated sites (villages and hilltop settlements) that had arisen in the sixth and fifth/early fourth centuries dissolved, and small farms seem to have taken their place in the landscape in the later fourth century.[24] In the Lepine mountains sites referred to as *basis villae*, *villa a piattaforma* or, more neutrally, platform sites arose. These sites consist of a farm building constructed with perishable materials but built on top of monumental, yet modest, earthen platforms enclosed by polygonal masonry walls. These constructions imply that the owners could mobilize and invest considerable resources in construction, and it seems likely that they represent rural estates owned by local elites. These elites invested not only in their farm buildings, but also in agriculture: On a number of these sites press beds have been found, suggesting they were involved in specialized wine, or perhaps more likely, olive oil production. Furthermore, agricultural terracing with facings in polygonal masonry also occurs widely in the Lepine foothills and uplands, suggesting investments were made in agricultural production, again most likely for olive cultivation. The regular spacing and association of platform sites with roads support the hypothesis that they represent larger estates, producing for a growing urban market.[25]

It should be emphasized that the chronology of these platforms and associated agricultural features remains unclear, owing to a lack of excavated well-dated contexts. However, considering both the ceramic assemblages found on the surface and the stylistic similarities of the platform walls to those of the fortifications and interior terracing of nearby

[23] "... è difficile resistere alla tentazione di credere che quelle che abbiamo chiamato finora 'future ville' fossero già ville, o comunque insediamenti di un certo rilievo" (Di Giuseppe 2005: 21). Cf. Di Giuseppe 2018: 54–8 and fig. 15 for the increase after 350. The typological links between early elite sites and later villas is of course much more doubtful, and continuity of occupation does not equal continuity of ownership or socioeconomic status. See also Patterson et al. 2020: 91–3.

[24] De Haas 2011: 183–93. [25] De Haas, Attema, and Tol 2012.

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towns such as Norba, Cora, and Setia, it seems most likely we should place their construction in the (early?) third century.[26] It should be noted that ceramic evidence from surveys suggests that many of these sites already existed in the sixth and fifth centuries. Following Di Giuseppe's argument, they may already have represented elite estates in the fifth and fourth centuries, monumentalized in the third century.

Also in other parts of south Latium, rural sites of different sizes existed. This is particularly clear in the lower Pontine plain, where we have investigated c. thirty Middle Republican farm sites without later occupation phases, which provide reliable information on the size of farms in this particular period. These sites varied in size between c. 0.05 and 0.35 ha, with a main peak around 0.1–0.15 ha and a smaller group of sites of substantially larger size (Chart 7.2).[27] This bimodal size distribution suggests we are dealing with at least two classes of farms – or perhaps more realistically, a continuum of smaller and larger farms that exploited plots of varying size in this reclaimed area (see Section 7.3).

In sum, the evidence suggests that both the numbers of small, simple farm sites and larger rural sites with an elevated socioeconomic status increased in the later fourth and third centuries. Although in some areas such larger sites replaced smaller farms, in general both seem to occur side by side. Likely, the larger sites also controlled larger proportions of the landscape, and were

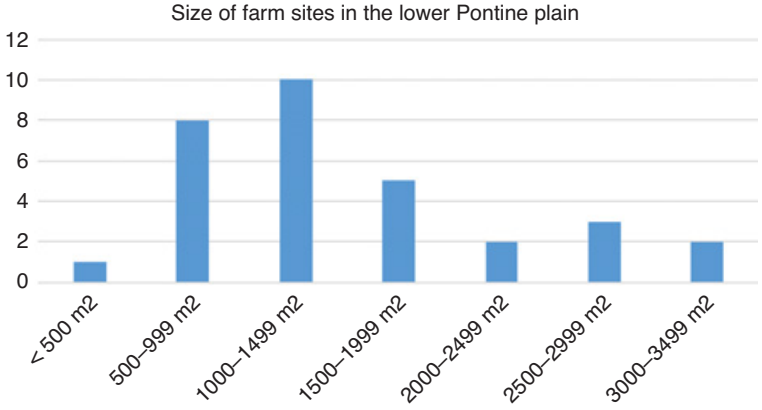

Chart 7.2 Size of late fourth-/third-century farm sites in the lower Pontine plain. Prepared by the author.

[26] De Haas, Attema, and Tol 2012, with extensive discussion of various chronological and socioeconomic interpretations of similar sites in Sabina, South Lazio, and northern Campania. Cf. Panella 2010: 59–60 for possible models in Sicily and the Punic World.

[27] The sites in Chart 7.2 were all abandoned after the third century, not occupied before that time, and their extent could be established clearly in the field.

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associated with agricultural intensification and specialization.[28] Employment of slave labor on these sites seems plausible (but archaeologically impossible to prove),[29] but if we follow Scheidel's argument, slaves would in fact already have been much more widespread before the general increase in the number of these sites in the late-fourth and third centuries – and perhaps also at less conspicuous sites. So, while slave labor probably played a role in the rise of commercial farming, it was surely not a new phenomenon or a likely incentive.[30]

7.2.3 Ceramic Assemblages and Economic Change

These changes in settlement typologies and associated landholdings can be related to processes of urbanization and socioeconomic integration that involved areas far beyond Latium.[31] We may refer to both the rise of local urban markets, and increasing levels of long-distance exchange: In the bay of Naples, an area with a long tradition of craft production and very favorably situated in terms of overseas trade routes, commercial wine production expanded massively.[32] Similar processes of agricultural specialization in wine and oil production occurred in Rome's Suburbium, though here primarily to supply the growing market at Rome.[33] Another indicator for such expanding economic networks concerns the rise of black gloss ceramic productions, which both served the many local urban markets and dominated an international market from the later fourth century onward.[34]

While the ceramic assemblages of the SES and Suburbium projects have not been fully published yet, reflections of these developments are visible in the ceramic data of the PRP. For example, early Graeco-Italic amphorae attesting to the consumption of imported wine are found in the ceramic assemblages of both smaller and larger (platform) sites around Norba and in the lower Pontine plain, and early-to-mid-third-century black gloss fine

[28] In the case of olive cultivation and viticulture we are clearly dealing with intensification processes, but the exploitation of marginal areas may also have involved processes of extensification (e.g. through animal husbandry). Obviously, cultivation of (a wide range of) cereals remained the dominant form of arable farming in this period (cf. Trentacoste and Lodwick, Chapter 8 in this volume).

[29] Cf. Panella 2010, who assumes slave labor played a substantial role in the development of commercial farming in the late fourth century.

[30] Scheidel in this volume (Chapter 5).

[31] Urbanization: Sewell 2016; Economic expansion and integration: Kay 2014; De Haas 2017a.

[32] Olcese 2017, 311–14. Economic motives were surely among the reasons behind the treaty of alliance Rome struck with Neapolis, one of the main port cities of the central Mediterranean, in 326.

[33] Panella 2010.

[34] Morel 1969; Ferrandes 2006; Stanco 2009; Cibecchini and Principal 2002; Di Giuseppe 2012.

wares occur commonly on rural sites, with the oldest fragments dating back to the mid-to-late fourth century.[35] This massive consumption of fine table wares and imported wine surely reflects an increasing connection of rural estates to regional markets; accepting them as a proxy for rising standards of living, they may also reflect increasing levels of prosperity.[36] An initial study of Middle Republican coarse wares seems to suggest these ceramics were also exchanged over considerable distances within central Tyrrhenian Italy.[37]

7.3 Reorganized and Reclaimed Landscapes: The Evidence from Centuriations

Besides settlement data, profound changes to rural landscapes are also suggested by infrastructural works, especially centuriation.[38] These field systems have been reconstructed on the basis of traces visible in aerial photographs and cartographic sources throughout Central Italy.[39] However, in assessing this evidence in the historical context of the fourth century, there are two issues. First, the approach used by French scholars to identify these systems has rightly been criticized for not properly taking into account local geomorphological and postdepositional contexts, which has led to unreliable and even false identifications.[40] Second, the dating of these systems is usually derived from assumed connections with historical colonization and land-distribution events, without any archaeological evidence to support such claims. The lack of standardization of the measurements used in these field systems might imply they relate to indigenous and/or pre-Roman contexts, or alternatively to later land reforms.[41] Thus, the paradigmatic interpretation of centuriation as a Roman, colonial phenomenon is now criticized.

[35] Recent overview with discussion of microregional variations: Tol 2017. See also Attema et al. 2022.

[36] De Haas, Tol, and Attema 2011; Jongman 2014.

[37] Borgers, Tol, and De Haas 2018.

[38] Technically, the term centuriation refers to one specific type of field system based on rectangular modules (canonically of 10 x 10 *actus*). In the following I use this term as an umbrella for all cadastral systems, including land division in elongated strips, *strigatio*. For an introduction: Dilke 1972.

[39] Bussi and Vandelli 1985; Chouquer et al. 1987 (revised in Libertini 2018). For the *corpus agrimensores*: Campbell 2000.

[40] Discussion of French and Italian schools of research: Franceschelli 2015. Critique of the French School: Quilici 1994: 130–1.

[41] For a critical discussion of the ideological underpinnings of the colonial model: Pelgrom 2018. See also Terrenato 2019: 226–9.

To some extent, I agree with these critiques: Rather than assuming a priori a link between early Roman expansion and centuriation, this link should be substantiated by the archaeological evidence in the form of rural settlement associated with these systems and/or direct dating of associated features (ditches, canals, roads).[42] The ascription of centuriation systems to the fourth and early-third centuries, presented in Figure 7.3 and Table 7.2, should therefore be assessed cautiously.[43]

At the same time, for several cases there is convincing evidence to support an early date for centuriation. A case in point is again the Pontine plain, where – as we have seen – sudden and widespread settlement appeared in the later fourth century, which could only have taken place upon reclamation of this marshland.[44] For Cures Sabini, third-century sites have been found throughout the centuriated area as well; for Reate, surveys on the eastern edge of the centuriated area show a peak in settlement in the Republican period (more specifics are unfortunately not given).[45] Around Privernum, surveys have identified numerous sites of the fourth and third centuries that may be linked to the *strigatio*.[46]

These more convincing cases suggest that the rural settlement expansion in the later fourth and early third centuries went hand in hand with large-scale interferences in the physical landscape. In this light, the use of different field systems (*centuriatio* and *strigatio*) may be of specific interest.[47] Pelgrom has recently argued that *centuriatio*, rather than generally being applied to areas settled by Roman citizens, was used in close proximity to Rome in fertile lowland areas, perhaps not only for handing

[42] Issues of archaeological dating: Franceschelli 2015: 204–5.

[43] For example, the presumed traces of *strigatio* south of Norba continue between areas separated by cliffs of c. 200 m high, or on closer inspection represent recent roads and tracks without older predecessors (Van Leusen et al. 2003–2004: 312); cf. Terrenato 2019: 228 for a similar argument concerning Aletrium, and Stek 2018: 162–3 for Alba Fucens.

[44] De Haas 2017b.

[45] Cures: Muzzioli 1985, corroborated by the Corese survey (Patterson, Di Guiseppe, and Witcher 2020: 106). It is assumed that the centuriated area was *ager quaestorius*, land leased out by the state in large blocks. Reate: Coccia and Mattingly 1995: 115–16. Recent surveys around Interamna await final publication; Launaro and Leone 2018: 335–6 suggest that site numbers were relatively low between 350 and 200, but do not discuss the period before 350.

[46] Cancellieri 1983: 35–7.

[47] These systems were previously thought to reflect different levels of investment: the Roman state would more precisely register land holdings around citizen colonies and in *viritane* distributions through *centuriatio* because this was useful for taxation, whereas for Latin colonies this was deemed less useful as these colonists were not Roman citizens and hence were not taxed by Rome. This explanation seems unsatisfactory, as it does not explain why in some *viritane* distributions (Privernum, the Sacco valley) *strigatio* and not *centuriatio* was used.

Table 7.2 *Land-division systems ascribed to the later fourth/early third centuries*

Area	Type	Module	Ascribed date	Archaeological dating evidence	Size (km^2)	Source
Privernum	*strigatio*	13 *actus*	340?	Associated settlement expansion in later fourth/early third century	26	Chouquer et al. 1987; Libertini 2018; Cancellieri 1983
Ferentinum	*strigatio*	10 *actus*	338?	-	53	Chouquer et al. 1987; Libertini 2018
Alatrium	*strigatio*	12 *actus*	second half fourth century	-	87	Chouquer et al. 1987; Libertini 2018
Norba?	*strigatio*	*12 actus*	late fourth century	-	*16*	Chouquer et al. 1987; Libertini 2018
Pontine plain	*centuriatio*	10 *actus*	late fourth century	Sharp rise in rural settlement in (late) fourth century; radiocarbon dating of centuriation features	121	Cancellieri 1990; De Haas 2011 and 2017b
Tarracina	*strigatio* (*centuriatio*?)	2 *actus* (20 *actus*)	late fourth century?	-	7	Chouquer et al. 1987; Libertini 2018; Cancellieri 1983
Interamna Lirenas	*strigatio*	13 *actus*	312	Expansion in rural settlement?	55	Chouquer et al. 1987; Libertini 2018
Artena	*strigatio*	16 *actus*	late fourth/early third century?	-	8	Quilici 1991
Anagnia	*strigatio*	10 *actus*	306	-	54	Chouquer et al. 1987; Libertini 2018
Alba Fucens	*strigatio*	12 *actus*	303	-	113	Chouquer et al. 1987; Libertini 2018
Minturnae	*centuriatio*	4 *actus*	296?	-	3	Chouquer et al. 1987; Libertini 2018
Sinuessa	*centuriatio*	16 V	296?	-	6	Chouquer et al, 1987; Libertini 2018
Reate	*centuriatio*	20 *actus*	early third century	Associated settlement expansion in Republican	50	Camerieri, De Santis, and Matteoli 2009
Cures Sabini	*centuriatio*	10 *actus*	early third century?	Associated settlement expansion in third century	43	Muzzioli 1985

Prepared by the author.

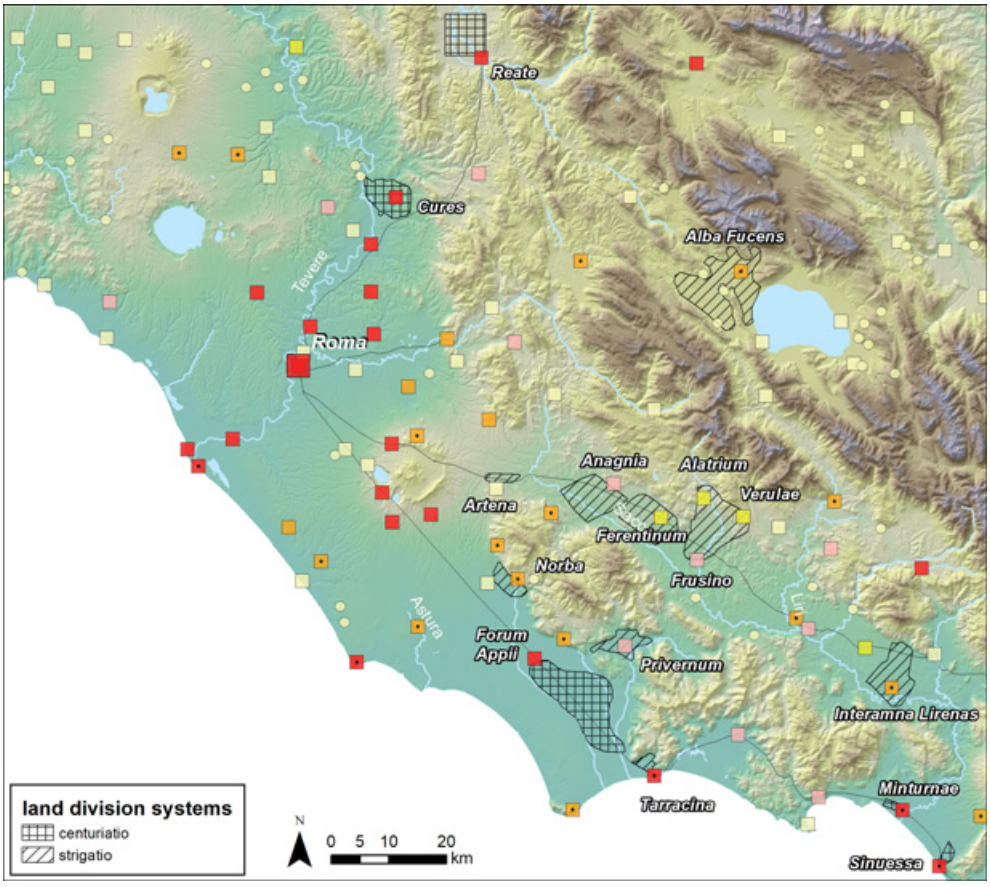

Figure 7.3 Land-division systems hypothetically ascribed to the fourth and early third centuries BCE. Drawn by the author.

out small plots but also for selling and leasing of public land.[48] While this hypothesis fits with the economic context sketched in this chapter, I would suggest that it is not primarily proximity to Rome or the commercial aim of registering landholdings more precisely that explains the use of different systems, but rather physical geographical conditions. With the exception of Cures, *centuriatio* is used in contexts where natural drainage conditions are

[48] Pelgrom 2018. There are problems with this hypothesis: The fact remains that *centuriatio* did not occur in all areas where such *viritane* distributions took place; one can think, for example, of the areas in the Sacco Valley, which were certainly not further away from Rome and probably also no less fertile than centuriated areas around Reate and in the Pontine plain. Also, the connection with the selling and leasing of land in the third and second centuries that Pelgrom suggests is chronologically problematic for the Pontine case, where the initial phase of colonization and *centuriatio* is dated earlier.

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poor and radical measures are needed to reclaim land. As palaeo-environmental studies show, this is the case not only for the centuriated area in the Pontine plain, but also at Reate, Minturnae, and Sinuessa in the lower valley of the Garigliano river.[49] All these areas were characterized by badly drained marshlands that needed well-designed drainage systems, for which centuriation was apparently the more suitable approach. It seems likely that such concerns were less pressing in other areas.

7.4 The Socioeconomic Implications of Centuriation: The Pontine Case

To illustrate the scale and impact of these projects, let us take a closer look at the Pontine case (Figure 7.4). Early Roman interventions in this marshland did not only comprise the centuriation itself, which covered at least 120 km^2 with an intricate system of main canals of c. 5–6 m wide, secondary canals draining water into these main canals, and yet smaller ditches that drained individual plots of land.[50] The main canals of the centuriation drained into the Decennovium, a major canal c. 15 m wide that runs along the Via Appia for some 30 km between Forum Appii and Tarracina. The Via Appia, yet another part of early Roman interventions, was in this stretch built on a substantial dike (presumably using soil dug out from the Decennovium). Besides this main drainage axis, parts of the river Oufens were canalized, and an additional canal, the Rio Martino, was dug through the marine terraces that encloses the lower plain to the south in order to divert part of the run-off from the Lepine mountains toward the sea. This canal, c. 10 km long, would have required complex engineering and deep digging, as it cuts through ancient beach ridges with a height of up to c. 35 m. above sea level (the lower plain itself is situated only a few meters above sea level). All in all, these interventions radically changed the hydrology and environmental conditions in the lower plain.

Labor-cost studies provide insight into the economic implications of these interventions. This approach aims to quantify the costs of man-made structures, usually expressed as labor time estimates, based on an assessment of the procurement and transport of raw materials as well as the construction process itself, and using labor inputs derived from experimental and/or

[49] Pontine plain: Sevink et al. 2013; Feiken 2014; De Haas 2017b. Reate: Calderini et al. 1998; Camerieri, De Santis, and Matteoli 2009. Garigliano basin: Bellotti et al. 2016.

[50] De Haas 2017b for the evidence and a hydrological model.

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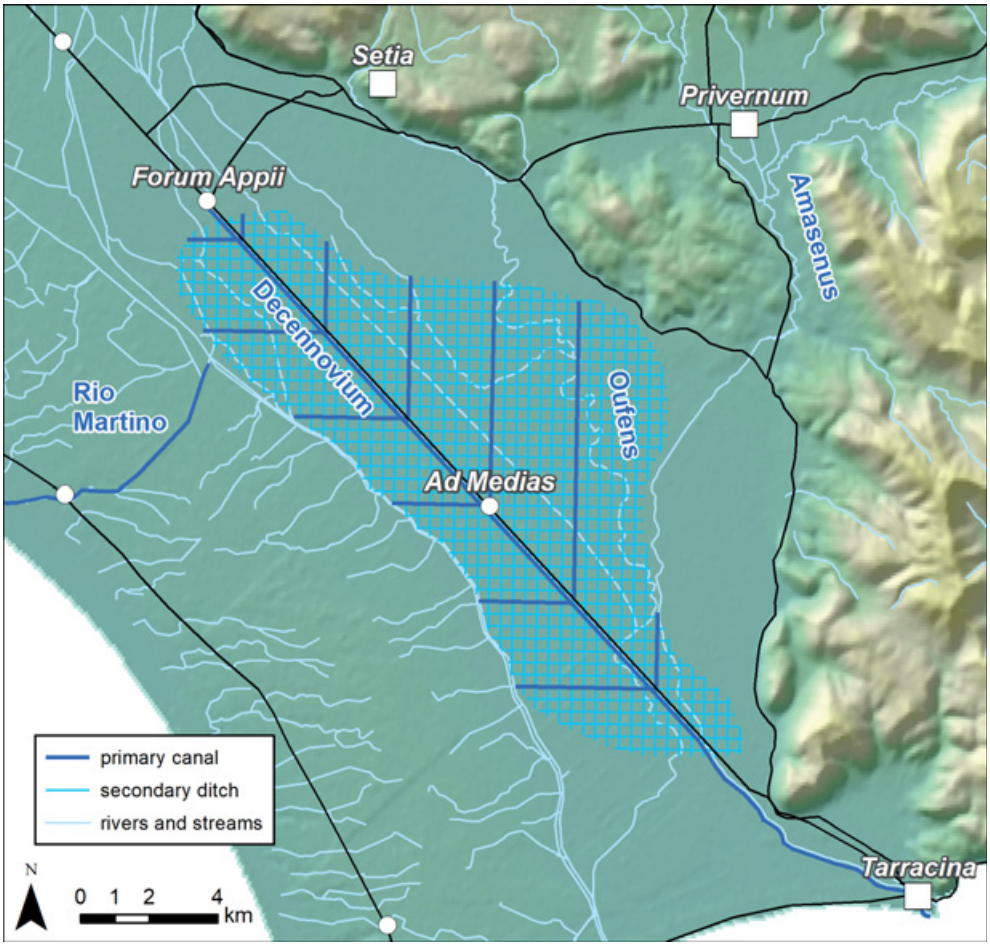

Figure 7.4 Reconstruction of the main and secondary canals of the Pontine centuriation in relation to natural streams and rivers. Drawn by the author.

comparative historical contexts.[51] While most often applied to buildings, this approach can also be used to quantify costs of dug-out features such as ditches and canals. In fact, considering the relative simplicity of such digging, many of the uncertainties surrounding the construction process of buildings (provenance and transport costs of raw materials, relative costs of applying different materials) do not apply to these projects (even if soil properties that affect the speed and ease of excavation also vary substantially). This means that the margins of error in the calculations are relatively small, and that the outcomes

[51] On the approach: Abrams and Bolland 1999; McCurdy and Abrams eds. 2019. Applications to the Roman world: Thornton and Thornton 1989; DeLaine 1997; Bernard 2018a.

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are useful as an indicator of the order of magnitude of investments. They can, moreover, shed light on the scale of these projects from a cross-cultural comparative perspective.[52]

I use this approach to quantify the costs of the main features of the centuriation and the Decennovium, excluding the construction of the Via Appia, Rio Martino, and other related canalizations. Furthermore, I limit myself to the main canals that seem crucial for the draining of the area and the supposed ditches surrounding the primary blocks of land as indicated in Figure 7.4; all smaller ditches between and within individual plots are also excluded.[53] Also, this approach assumes that the work on this project was executed efficiently, constantly, and without any unforeseen complications. The resulting labor inputs therefore represent an absolute minimum estimate for the centuriation, which in turn was part of a much larger project.

Table 7.3 provides an overview of the inputs for the cost calculations (cf. reconstruction in Figure 7.4). The volume of the Decennovium is based on the measured length and width of the canal; its depth is my own estimation.[54] For the main canals, geophysical prospection data and analysis of aerial photographs suggest a width of up to 6 m, but allowing for collapse of the cut and for the fact that along its edges the canals were less deep, I use an average width of 5 m. Coring data suggest depths of c. 1–1.4 m, but it seems likely that because of erosion and deflation the top layer through which these canals were dug was originally thicker; to correct for this, I propose an average maximum depth of

Table 7.3 *Quantification of the volume of main and secondary canals within the Pontine centuriation*

Feature	Total length (m)	Average depth (m)	Average width (m)	Volume (m^3)
Decennovium	30,000	2	13	780,000
main canals	42,300	1.5	5	317,250
secondary canals	639,476	0.5	1.5	479,607
TOTAL				**1,576,857**

Prepared by the author.

[52] Cf. Turner 2018.

[53] Some of these main blocks may not have been delimited by ditches but by roads, cippi, or vegetation, or perhaps not at all. The cost of such delimitations would have varied a lot; I take the modest labor inputs for ditches as a reasonable average.

[54] Not all main canals included in this reconstruction have been identified so far; their existence will hopefully be confirmed by ongoing ground-truthing by the author. The total width of the Decennovium is c. 15 m, but allowing for substantial tapering of the profile toward the base of the canal I here use an average of 13 m.

150 cm. For the secondary ditches, we have some geophysical prospection and coring data that suggest these were on average perhaps 1.5 m wide and 50 cm deep.[55]

Together, these figures suggest a total of more than 1.5 million m^3 of heavy clayey soils being moved. Drawing on comparative labor rates as compiled by Turner (2018), we may estimate soil extraction rates at 1.5–2.2 m^3 per person-hour (assuming the use of metal tools and applying rates for compact soils).[56] This gives us the approximate minimum and maximum labor costs as tabulated in Tables 7.4 and 7.5; considering the very heavy clay soils in the Pontine plain, the actual inputs probably more likely approached the maximum estimates of Table 7.5. These figures suggest a labor investment of between 235,000 and almost 350,000 (10-hour) workdays. Overhead for planning and management may add another 5–10 percent labor input, which gives a massive investment of 250,000–380,000 workdays.

These overall figures in turn suggest that we are here dealing with a project that implied a labor force of hundreds, if not thousands of laborers being employed over substantial periods of time; with a workforce of several thousands the digging could have been executed within one year, or several years at a labor force of 500–1500. As already suggested, this is a best-case scenario; for example, if not the entire workforce but only half of it disposed of metal shovels and the other half instead had to use wooden implements, the labor inputs could easily double.[57] Also, while 10-hour workdays may have been common, laborers could probably not

Table 7.4 *Minimum labor-cost estimates, assuming 1.5 person-hour per excavated m^3 of soil, 10-hour workdays, and 220 workdays per year (cf. Turner 2018)*

		Total labor		Duration (5000 laborers)		Duration (1000 laborers)		Duration (500 laborers)	
Feature	Total volume	Hours	days	days	years	days	years	days	years
Decennovium	780,000	1,170,000	117,000	23	0.1	117	0.53	234	1.1
Large canals	317,250	475,875	47,588	10	0.05	48	0.22	95	0.43
Secondary canals	479,607	719,411	71,941	14	0.06	72	0.33	144	0.65
TOTAL	1,576,857	2,365,685	236,569	47	0.2	237	1.1	473	2.2
TOTAL incl 10% overhead		**2,602,254**	**260,225**	**52**	**0.22**	**261**	**1.21**	**520**	**2.42**

Prepared by the author.

[55] Corings: De Haas 2017b; Tol et al. 2020. [56] Turner 2018: Table 9.2.
[57] Turner 2018: Table 9.2

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Table 7.5 *Maximum labor-cost estimates, assuming 2.2 person-hour per excavated m^3 of soil, 10-hour workdays, and 220 workdays per year (cf. Turner 2018)*

		Total labor		Duration (5000 laborers)		Duration (1000 laborers)		Duration (500 laborers)	
Feature	Total volume	Hours	Days	days	years	days	years	days	years
Decennovium	780,000	1,716,000	171,600	34	*0.15*	172	*0.78*	343	*1.56*
Main canals	317,250	697,950	69,795	14	*0.06*	70	*0.32*	140	*0.64*
Secondary canals	479,607	1,055,135	105,514	21	*0.1*	106	*0.48*	211	*0.96*
TOTAL	1,576,857	3,469,085	346,909	69	*0.3*	347	*1.6*	694	*3.2*
TOTAL incl 10% overhead		**3,815,994**	**381,599**	**76**	***0.33***	**382**	***1.76***	**764**	***3.52***

Prepared by the author.

productively work for such long periods.[58] In practice, moreover, excavation in the marshy environment would probably have shortened the work year, and diseases such as malaria would also have lowered productivity and led to loss of lives, as was also the case during reclamations in the 1930s.[59] Considering the complexity of the hydrology of the area, it seems highly likely that the works did not go entirely according to plan, or that extreme weather conditions caused further delays.

Finally, as already highlighted, the calculations have only taken into consideration the main elements of the system, excluding both smaller ditches and gullies and the construction of the Via Appia and Rio Martino canal. While such small ditches may well have been dug upon arrival by colonist farmers that settled the area, some of them could equally have been dug in advance by the same labor force that was responsible for the main canals. Equally, the construction of the Via Appia was closely linked to the construction of the Decennovium and must therefore have been organized in conjunction with the wider project. The same seems likely for the digging of the Rio Martino.

Thus, in all likelihood the reclamation of the Pontine marsh would have involved a workforce of several thousands, working for at least several years.[60] In turn, the Pontine centuriation was only one of several such

[58] Cf. Bernard 2018a: 78; Bernard 2022.

[59] De Haas 2017b: 479 with references. While the reclamation project of the Fascist regime exceeded the Roman efforts in the region substantially in scale (a much larger area was reclaimed), the Romans relied fully on human labor inputs, which may have approached those of the early twentieth century and surely exceeded those of earlier projects initiated by the papal state.

[60] Cf. Bernard 2018a: 130–1 for the costs of Rome's Middle Republican walls estimated at c. 7,000,000 person-days.

projects (Table 7.2); the two other large centuriations (Cures and Reate) cover an additional 100 km^2, while all systems that have been ascribed to the period between 338 and 268 together cover at least 634 km^2 (although again, some of these may pertain to later periods). Furthermore, systems outside the area discussed here in the Apennine uplands and Campania would raise this overall figure further.[61] Although in most areas the construction of these systems was less challenging in terms of hydrological conditions (and therefore required fewer canals to be dug) than in the Pontine plain, the overall labor inputs would still be massive.

Considering their close geographical links, it seems likely that the development of these land divisions was carried out in conjunction with another type of major infrastructural work, road building.[62] The most notable of such roads was of course the Via Appia, initiated in 312 and covering some 185 km from Rome to Capua across marshlands, hills, and mountainous landscapes. Although the quantification of such projects is complex and beyond the scope of this chapter, the labor inputs probably exceeded those for land divisions significantly.[63] Taken together, infrastructural projects surely involved the continuous investment of state revenues and the operation of a substantial labor forces throughout the later fourth and third centuries.[64] It is beyond the scope of this chapter to evaluate what types of labor these projects involved, but it seems plausible that one could draw on both slave and wage laborers and perhaps also corvée labor.[65]

[61] Apennine area north of Reate (Nursia, Villa S. Silvestro): Camerieri 2013. Campania (ager Falernus, Cales): Libertini 2018: 125–33 and 278.

[62] Laurence 1999. For the links between road building and Roman expansion: Coarelli 1988; Bradley 2014.

[63] Berechman (2003: Table 2) estimates a total of 308,429 person-hours for *a single* km of Via Appia, which would imply for the 30-km stretch through the Pontine's centuriated area a stunning 9,252,870 person-hours or 925,287 workdays (a factor of three times the total costs of the ditches and canals as calculated here). However, roughly a third of the costs in Berechmann's calculations comes from the surface preparation with large basalt lava blocks. As the early road probably did not have such a pavement, costs may be reduced considerably. Moreover, Berechmann used higher overhead costs (15 percent), and inputs in the construction of drainage gullies would not have to be included, as the Decennovium provided drainage for the road. Thus, it seems we should, for this area, lower his estimated inputs by as much as 30 or 40 percent (which gives figures more in line with Bernard 2018a: 130–1).

[64] A superficial comparison suggests the labor inputs of all these projects combined would be comparable to the largest reclamation projects undertaken by the Aztec Empire, which involved the continued input of several thousands of (corvée) laborers over several decades (Arco and Abrams 2006), or major ditch- and dike-construction programs in Medieval Europe (Squatriti 2002).

[65] Bernard 2018a: chs. 4 and 6.

7.5 Contextualizing Rural Developments: Demographic and Socioeconomic Implications

Having presented the archaeological evidence for changes in the Central Italian countryside, let us reflect on what this evidence implies about demographic, economic, and social changes in the fourth and third centuries.

7.5.1 Demography

It is generally accepted that settlement trends may cautiously be used as a proxy for rural population change over time. We may of course debate to what extent the increase in site numbers observed in almost every part of Central Italy after 350 also reflects an increasing visibility of sites due to increased ceramic consumption (especially of black gloss fine wares). However, it is difficult not to consider the general increase in site numbers and the occupation of "empty" marginal areas as a reflection of rural population growth in the fourth century.[66] There are local and regional variations in the timing and extent of this growth: It seems to have taken place earlier and more gradually in the direct surroundings of Rome; further away from Rome, it generally took off later (after 350), but was much more pronounced. Newly reclaimed areas in particular absorbed substantial numbers of people, who may well have migrated from Rome and its direct surroundings. It seems reasonable to suggest that conditions for rural expansion were more favorable earlier on in areas close to Rome and the major Latin and Etruscan towns, and only with increasing levels of territorial control and decreasing threat of seasonal raiding did they improve in more marginal landscapes, such as the Sabine uplands and the Pontine plain.

The growth of rural populations takes on additional significance in light of urban developments. Urban centers in Central Italy, many of which had witnessed a period of decline and contraction in the fifth century, generally seem to have recovered in the fourth century. This is, for example, clear in

[66] *Contra* Terrenato 2019: 98–9, who argues that demographic growth cannot explain the global nature of this phenomenon. He suggests the growth reflects improved economic conditions and/or a shift from nucleated (village-based) to dispersed settlement patterns caused by changes in land ownership. While improved economic conditions surely play a part in making Middle Republican sites well visible (see Section 7.2 above), the evidence seems to suggest that nucleated settlements also grew in numbers in this period. Also, I doubt whether such alternatives would be a more likely explanation for the global nature of the phenomenon.

an increase in fortification construction and a major growth in the numbers of urban sanctuaries.[67] Moreover, new settlements with urban characteristics also arose; one may think of newly founded colonies, but also of *fora* and other minor centers that were founded in this period.[68]

This increase of regional urban and rural populations is probably matched by population growth in the city of Rome itself, which by the third century is believed to have housed several hundreds of thousands of inhabitants.[69] Taken together, the evidence suggests an, in my view, substantial growth of regional population levels in the later fourth and third centuries, which seems perfectly compatible with the historical context. After long periods of warfare and plundering, Roman expansion led to more stable socioeconomic conditions in this core region: Apparently, the negative demographic effects of prolonged warfare in previous periods had been offset by natural growth and migration into this area.

7.5.2 Socioeconomic Change

In this context of urban and rural population growth, it is perhaps not surprising that we can cautiously identify archaeological evidence for economic diversification and growth. For the countryside, we witness both an intensification of exploitation (increasing densities of sites) and an expansion of agriculture into previously marginal areas – in which state investments in drainage and infrastructure played an important role. Furthermore, even if the evidence is at present limited, the later fourth and early third centuries may also have witnessed the spread of larger estates and market-oriented specialized production strategies. Platform sites, showing investments in rural architecture and (admittedly badly dated) evidence for specialization in olive oil production, may be examples of this. It is highly likely that these estates were owned by local elites and supplied local and regional urban markets.

While similar evidence for investments in rural estates lacks in other areas, both survey and excavation data clearly show evidence for diversification in terms of both the size and prosperity of rural sites. Smaller and larger farms occurred side by side, and the ceramic assemblages show

[67] Fortifications: Sewell 2016; sanctuaries: Bouma 1996.

[68] See also Palombi (Chapter 9) in this volume. Minor centers: Tol et al. 2014; Tol and De Haas 2016.

[69] Estimates for early-fourth-century Rome lie between 75,000 and 150,000 (Bernard 2018a: 103–6): Rosenstein in this volume (Chapter 4) asserts a population of c. 125,000 in 341 BCE, while Panella (2010: 68–9) gives ranges from 200,000 to 750,000 inhabitants for the city and its Suburbium in the third century BCE.

differential levels of fine ware consumption. The general spread of fine table wares and (rarer) wine amphorae on both smaller and larger rural sites more generally reflects increasing levels of prosperity for many rural dwellers.

These developments were of course tightly bound to urban developments. Increasing urban populations imply an increasing demand for rurally produced foodstuffs, but also an increasing market for craft goods. Such demand triggered processes of specialization in both urban and rural contexts, as is clear from the rise of specialized ceramic production workshops in both town and country. Perhaps the main trigger was that of urban construction projects, which caused increased demand for both raw materials (stone, timber, clay) and labor, both skilled and unskilled.[70]

The development of a regional infrastructure further stimulated economic expansion and integration. Roads lowered transport costs and enhanced connectivity between rural areas, local centers, and Rome, and link in with the occurrence of regional and extraregional ceramics (fine wares and Campanian wine amphorae) that seem to signal the start of a process of market integration.[71] While the construction of major roads probably drew on forced labor (slave and corvée), it likely also provided a considerable labor market over prolonged periods of time of which both urban and rural poor could benefit.[72]

7.6 The Historical Context

The archaeological evidence from field surveys and Roman land-division systems as discussed in this chapter suggests that the late fourth and early third centuries were a key moment of transformation in the rural landscapes of central Tyrrhenian Italy. Let us now explore how the observed transformations tie in with the broader historical context, focusing on the impact of Roman territorial expansion, the consequences of the Struggle of the Orders, and related issues concerning the rise of larger elite estates and agricultural changes.

First, let us consider the impact of early Roman expansion on rural landscapes, an issue that has received a lot of attention in recent

[70] Ceramic production: Di Giuseppe 2012; Tol and Borgers 2016. Construction and labor: Bernard 2018a.

[71] Cf Morel 2007; De Haas 2017a.

[72] Bernard 2018a: 109–13 on corvée labor; cf. Scheidel in this volume (Chapter 5) on slave labor.

scholarship.[73] It is obviously beyond the possible to use the archaeological record to reconstruct or illustrate the short-term history of events relating to early Roman expansion directly. On a more general level, however, the archaeological evidence seems to reflect the gradual outward movement of warfare, and the increasingly stable conditions in Central Italy. With the exception of Rome´s direct surroundings, the archaeological evidence from areas that witnessed prolonged struggles and seasonal raiding in the fifth and earlier fourth centuries is generally poor and scarce. It is in the later fourth century that most, if not all, of these areas show more and richer rural settlements, here interpreted primarily as a sign of demographic and economic expansion. These changes are of course not a direct consequence of warfare or expansion: In some cases there is a considerable chronological gap between conquest and settlement expansion. They do, however, reflect the more stable conditions that arose in central Tyrrhenian Italy in the wake of Roman expansion. Especially in marginal landscapes, the direct consequences of Roman expansion could be profound – and more visible archaeologically.

We could suggest that there were reciprocal links between ongoing military expansion and the socioeconomic developments observed in Central Italy: As I have argued, state investments in road building and centuriation played their part in stimulating economic expansion.[74] These investments, in turn, increased state revenues as well: Assigning land to colonists would increase the number of citizens liable for taxation, and the selling and leasing of land provided the state with additional sources of income that could be reinvested in military expansion and infrastructure. Conversely, as more conquered peoples outside Central Italy received Roman citizenship, the burden of *tributum* was divided between more and more people, which may have enabled more people to reinvest part of their income in agricultural production, thus also stimulating processes of intensification and specialization. The resulting surpluses were in turn also needed to support the army as it engaged in longer campaigns, further away from Rome, after c. 340.[75] Thus, conquest stimulated economic growth, and economic growth stimulated conquest.

The second issue to return to concerns the links between rural settlement developments and the Struggle of the Orders. It has been suggested that the spread of farm sites reflects the rise of private land ownership by

[73] De Haas 2011; Casarotto, Pelgrom, and Stek 2016; Stek 2017.

[74] Cf. Cifani 2021, framing this growth in Keynesian terms.

[75] As suggested by Rosenstein in Chapter 4, and Tan in Tan 2020 and Chapter 3 of this volume on the *dilectus-tributum* system and the exaction of *tributum* from *cives sine suffragio*.

smallholder peasant farmers, following on the presumed reforms of 367. Assuming these reforms are a historical reality, I remain skeptical whether we can directly relate the general expansion of rural settlement to the land reforms of the Licinio-Sextian Laws: There is a considerable chronological gap between these reforms and the expansion in rural settlement, which in most areas occurred in the late fourth and early third centuries. Also, this expansion concerned as much 'Roman' land as it did areas on which these reforms should not have had an impact (e.g. Latin territory in south Latium). More generally, we should keep in mind that because of the chronological resolution of the archaeological data, we may conflate episodes of crisis and expansion of such smallholders, and that the trends observed here are part of a much broader phase of rural expansion witnessed in many parts of the Italian Peninsula and, indeed, the wider Mediterranean. There may therefore be alternative (or complementary) economic and demographic processes at work.

At the same time, the development of rural areas may well have contributed to relieving social pressure at Rome: The massive infrastructural projects (although likely drawing mainly on forced labor) could provide employment for poor plebeians, and in tandem with land distributions offered opportunities for populists to exert their political agendas.[76] Many of the new farms that we see archaeologically may well have been settled by Roman plebeians who obtained a piece of conquered land. Conversely, the proximity to Rome, both as a growing market and sociopolitical arena, may have attracted non-Romans (gentilicial groups) to migrate toward and invest in the countryside.[77]

This also leads me to consider land ownership and social status, which remain difficult to trace archaeologically. From the historical perspective, we know that within an area new allotments could be made while groups could also maintain their landholdings. To trace such processes, we need a more detailed, local archaeological perspective (and more thorough publishing of survey data). In most areas discussed, the social changes reflected in our written sources remain elusive: Independent smallholder farms, tenant farms, or even farms tied by debt bondage or operated by a slave labor force would leave very similar archaeological signatures. Equally, the redistribution of land after conquest could well have implied the settlement of new owners at existing farm sites, while other pre-existing farms remained in the hands of local people; different historical processes can thus lead to archaeologically observed continuity of occupation.[78]

[76] Terrenato 2019. [77] Cf. Wright and Terrenato in this volume (Chapter 2).
[78] Cf. Di Giuseppe 2018: 104–12.

Thus, only in exceptional circumstances, especially in newly colonized territories, the evidence may allow a cautious evaluation of such issues. I again point at the case of the Pontine marshes with its well-preserved traces of Middle Republican colonization. The ceramic assemblages, with their fine table wares and imported wine amphorae, likely reflect independent landowners that were reasonably well off and are thus more compatible with private owners than with poor tenant farmers or slaves. The existence of larger and richer sites, moreover, clearly reflects a countryside that included both smaller and larger estates side by side.

In light of the above, it seems pointless to try and use the archaeological evidence to search for the transition from gentilicial to private land, the rise of historically attested ("Catonian") villas, or the start of slave-based agricultural production. Rather, the evidence suggests we deal with a diverse and dynamic Middle Republican countryside, in which Imperial expansion, warfare, and colonization were detrimental for some but offered opportunities for others; where elites of old continued to control estates, where many smallholders undoubtedly struggled to maintain their families, but where some farmers were also able to expand their production and improve their socioeconomic status; and where slaves became an increasingly important part of the labor force, even if perhaps not as a driver of economic change, as envisaged in traditional models describing the rise of villas and the slave mode of production.[79] Rather than debate the labels applied to our rural sites, it seems more important to note that the evidence firmly places an expansion of larger-scale, specialized production for the urban market, using additional labor (slaves and seasonal free labor), in the late fourth and third centuries – without denying continuities with previous periods.[80]

7.7 Concluding Remarks

While the archaeological evidence discussed in this chapter does not allow either detailed local or generalizing historical interpretations of rural developments, it does provide crucial new insights into rural settlement

[79] Scheidel in this volume (Chapter 5). Cf. Torelli 2012, placing the rise of villas based on slave labor in the context of the later fourth century, deriving from slave-based estates in Magna Graecia.

[80] Morel 2007; Becker and Terrenato eds. 2012. Trentacoste and Lodwick in this volume (Chapter 8) highlight the continuities in crop choices, including viticulture and olive cultivation, in the fourth and third centuries.

and economy in the Middle Republican period. This period is characterized by overall radical change, but with distinct local traits dependent on longer-term historical trajectories, urbanization processes, and geographical particularities. Areas close to Rome apparently show a higher degree of stability of occupation and exploitation, even if the data may hide considerable transformations; areas around Etruscan and Latin centers of old, in general already settled in the sixth century, were more radically (but variously) affected by warfare and Roman expansion in the fifth and first half of the fourth centuries; and marginal landscapes were increasingly settled and exploited from the later fourth century onward.

While these distinct local trajectories reflect *variability* in territorial and agricultural organization,[81] there are clear commonalities as well: There is undeniably a major expansion and increasing differentiation in rural settlement in the fourth/third centuries, which surely reflects a combination of economic and demographic expansion as well as social changes, even if these are archaeologically less tangible. As the stage of Roman expansion moved away from central Tyrrhenian Italy, sociopolitical stability enabled a phase of renewed urbanization, the rise of local and regional urban markets, and investments in the exploitation of the countryside, including formerly marginal landscapes. Treaties of alliance and infrastructural developments created increasingly favorable conditions for interregional exchange as well, and the inflow of wealth into Central Italy led to investments in agricultural (and artisanal) production – both by the state and by private individuals. The processes of economic expansion and integration so intensively studied for later periods thus clearly have their roots in this crucial phase of Roman history.

[81] Cf. Capogrossi Colognesi 2012.