

This is an extract from:

*The Economic History of Byzantium:
From the Seventh through the Fifteenth Century*

Angeliki E. Laiou, Editor-in-Chief

Scholarly Committee

Charalambos Bouras

Cécile Morrisson

Nicolas Oikonomides[†]

Constantine Pitsakis

Published by

*Dumbarton Oaks Research Library and Collection
Washington, D. C.*

in three volumes as number 39 in the series

Dumbarton Oaks Studies

© 2002 Dumbarton Oaks

Trustees for Harvard University

Washington, D.C.

Printed in the United States of America

www.doaks.org/etexts.html

The Agrarian Economy, Thirteenth–Fifteenth Centuries

Angeliki E. Laiou

There are important continuities between this period and the twelfth century, but also very significant differences.¹ The conquest of the empire by the Crusaders in 1204 and the subsequent division of the Byzantine territories affected the agrarian economy as it did other aspects of economic organization and economic life.² These territories, split among small Greek and Latin states, lost much of the cohesion they may have had: the Byzantine state did not and could not function as a unifying force, and, in the thirteenth century, there was very little to replace it. Thus economic developments in the empire of Nicaea were quite unrelated to developments in Macedonia or Epiros. After the reestablishment of Byzantine political control in Constantinople, there was an effort, which lasted through the reign of Andronikos III (1261–1341), to reunite the former territories of the empire. But, in fact, breakaway states still existed: Epiros and Thessaly were briefly reunited to the Byzantine state in the 1330s, only to fall to Stephen Dušan in 1348. After the great civil war of the mid-fourteenth century, imperial territories kept shrinking, with short periods of respite.

¹ K. V. Chvostova, *Osobennosti agrarnopravovykh otnoshenii v pozdnei Vizantii, XIV–XV vv.* (Moscow, 1968); P. Charanis, “The Monastic Properties and the State in the Byzantine Empire,” *DOP* 4 (1948): 53–118; J. Lefort, “Rural Economy and Social Relations in the Countryside,” *DOP* 47 (1993): 101–13; idem, “Population et peuplement en Macédoine orientale, IXe–XVe siècle,” in *Hommes et richesses dans l’Empire byzantin*, 2 vols. (Paris, 1991), 2:63–82; idem, “Radolibos: Population et paysage,” *TM* 9 (1985): 195–234; idem, *Villages de Macédoine*, vol. 1, *La Chalcidique occidentale* (Paris, 1982); idem, “Fiscalité médiévale et informatique: Recherche sur les barèmes pour l’imposition des paysans byzantins au XIe siècle,” *RH* 252 (1974): 315–52; A. Laiou-Thomadakis, *Peasant Society in the Late Byzantine Empire: A Social and Demographic Study* (Princeton, 1977); eadem, “The Economy of Byzantine Macedonia in the Palaiologan Period,” in press; N. Kondov, “Über den wahrscheinlichen Weizenantrag auf der Balkanhalbinsel im Mittelalter,” *EtBalk* 10 (1974): 97–109; N. Svoronos, “Le domaine de Lavra sous les Paléologues,” *Actes de Lavra*, ed. P. Lemerle, A. Guillou, N. Svoronos, and D. Papachryssanthou, *Archives de l’Athos*, 4 vols. (Paris, 1982), 4:65–173; H. Antoniadis, “Villages désertés en Grèce: Un bilan provisoire,” in *Villages désertés et histoire économique: Les hommes et la terre*, vol. 11 (Paris, 1965), 343–417; G. Ostrogorskij, *Quelques problèmes d’histoire de la paysannerie byzantine* (Brussels, 1956); idem, *Pour l’histoire de la féodalité byzantine* (Brussels, 1954); idem, *Les praktika byzantins*, in *ibid.*, 259–388; A. Kazhdan, *Agrarnye otnosheniia v Vizantii, XII–XIV vv.* (Moscow, 1952).

² Cf. K.-P. Matschke, “Commerce, Trade, Markets, and Money, Thirteenth–Fifteenth Centuries,” *EHB* 755–90.

Until the recovery of Constantinople by Michael VIII, the Byzantine lands consisted of the empire of Nicaea, the despotate of Epiros, and the Macedonian lands they slowly brought under control. After 1261, Byzantine territories included, at various times, Macedonia, Thrace, parts of Asia Minor, the islands of the eastern Aegean which were gradually lost in the course of the fourteenth century, parts of Epiros and Thessaly, and the despotate of the Morea, in the Peloponnese. Trebizond had quite an independent development. In terms of the agrarian economy, the continuities are provided by long-term factors such as the configurations and fertility of the soil and, to a lesser degree, by historical factors such as the prevalent type of exploitation, though these were also influenced by new conditions. The differences are dominated by the fact that the Byzantine state no longer functioned as an efficient mechanism of integration. An integrating factor did exist in the fourteenth and fifteenth centuries: it was international trade, dominated and organized by the Italian city-states, Pisa for a while, but primarily Genoa and Venice. The needs and activities of the Italian merchants made of the eastern Mediterranean an integrated trade system, in which the various regions were drawn, each with its own relations with the Italians. As a result, there are regional economies—those of Macedonia and Thrace, Epiros, Thessaly, and the Peloponnese—with some contact with each other to be sure, but with the important factor being their relationship with the Italians and their role in the trading system of the eastern Mediterranean.³ The agrarian economy was affected by this situation, as it was affected by the invasions, conquests, and insecurities that are frequent in this period. There are also chronological breaks within this period, although they differ to some extent from area to area.

General Characteristics

Population and Settlement

In any preindustrial agrarian economy, the population is a very important factor of production. It has already been established that an increase in the population of the countryside is to be credited for the increase in agricultural production after the tenth century.⁴ For the thirteenth to the fifteenth century, our information is highly skewed. It is scarce for the thirteenth century in all areas except Asia Minor, and even there it does not allow quantitative analysis. It is very rich for fourteenth- and fifteenth-century Macedonia, but not for other regions. The fragmentary information suggests that there was, overall, a population increase continuing from the early twelfth century until the early fourteenth, although, as we shall see, there were also areas of depopulation. Asia Minor has a general aspect of being well populated and prosperous in the thirteenth century.⁵ In eastern Macedonia, the pattern of settlement is the strongest

³ On the importance of regional economies, cf. Matschke, "Commerce."

⁴ J. Lefort, "The Rural Economy, Seventh–Twelfth Centuries," *EHB* 261ff.

⁵ See below, 314–15.

indicator of overall population increase: new hamlets were created, with a small peasant population, and the forest retreated.⁶ In western Macedonia, the information is less precise, but it seems to reflect a well-peopled area, with villages lying in relatively close proximity to each other; many of these villages appear in the sources in the thirteenth century, but they may well be older, and the movement of population is not at all clear.⁷ For Epiros and Thessaly we have no usable information at all, but the judicial decisions and opinions of Demetrios Chomatianos, archbishop of Ohrid, and John Apokaukos, from the early thirteenth century, do not indicate a demographic or economic crisis, although the only demographic figures we can establish, the number of children per couple (of a first marriage), is disturbingly low.⁸

What this suggests is that the political upheavals attendant on the Fourth Crusade did not have major demographic (or economic?) consequences in the countryside. Yet such a blanket statement obscures the fact that there was, in some areas, decline, although its extent may have been limited. In Asia Minor, it seems that some peasants fled their lands during the campaigns of Henry of Flanders, but then returned.⁹ It is certain that many dependent peasants (*paroikoi*) found a good opportunity to stop paying their dues to a landlord, but this is not, perhaps, of demographic significance.¹⁰ In Macedonia, on the other hand, before its reconquest by the Byzantines, there is sporadic evidence of demographic problems that cannot be linked to specific political events. In 1262 the village of Melintziani (in the theme of Thessalonike), which belonged to the monastery of Iveron, was called a *palaiochorion*, an abandoned village. It had 9 households of *paroikoi*, as against 23 in 1104, and it took thirty-nine years for the population to exceed this figure (29 households in 1301, 39 in 1321).¹¹ Some villages seem to have been abandoned.¹² In 1288 a piece of land belonging to the monastery of Skorpios, with vineyards and olive trees, which had previously been productive, was found deserted, unproductive, with only one monk, and was given to Hilandar to restore to production.¹³ Similarly, the lands of the monastery of Skamandrenou, including an olive grove, were utterly deserted in 1266/67, when they were given to the monks of Kutlumus, who restored them to production.¹⁴ The extent of such disrup-

⁶ Lefort, "Population et peuplement," 71, 75.

⁷ V. Kravari, *Villes et villages de Macédoine occidentale* (Paris, 1989), 57–58.

⁸ A. Laiou, "Contribution à l'étude de l'institution familiale en Epire au XIIIe siècle," in *FM* 6 (1984) = *Gender, Society and Economic Life in Byzantium* (Aldershot, 1992), art. 5, 281–83.

⁹ *MM* 4:34–41.

¹⁰ See below, 342–43.

¹¹ *Actes d'Iveron*, ed. J. Lefort, N. Oikonomides, and D. Papachryssanthou, *Archives de l'Athos*, 4 vols. (Paris, 1985–95), nos. 29, 52, 70, 79. The chrysobull of Michael VIII, in 1259, speaks in general of the decline in the fortunes of the monastery during the Frankish occupation: *ibid.*, no. 58.

¹² T. Pazaras and A. Tsanana, *Τό αρχαιολογικό έργο στή Μακεδονία καί Θράκη* (Thessalonike, 1995), suggest that Vrya was abandoned between 1259 and 1302.

¹³ *Actes de Chilander*, ed. L. Petit (repr. Amsterdam, 1975) (= *VizVrem* 17 [1911]), no. 10 (1288), 133, 145. For a general sense of renewal, even in agricultural affairs with the imminent end of the Frankish occupation or for a period of years after it, see, for example, *MM* 4:336ff (Michael VIII).

¹⁴ *Actes de Kastamonitou*, ed. N. Oikonomides, *Archives de l'Athos* (Paris, 1978), no. 3 (1317).

tion is not known, and the evidence is not sufficient to counterbalance the indications of expansion. One might, however, suggest that the restoration of Byzantine rule in Macedonia brought an increase in both prosperity and population. Dedicatory inscriptions in and around Kastoria attest to a certain prosperity of the provincial magnates, people with a limited amount of property, during the second half of the thirteenth century and the first part of the fourteenth.¹⁵

In the Peloponnese, too, the recapture of the areas of Mani, Monemvasia, Geraki, and Mystra, in 1262, may have brought some prosperity to the local aristocracy, who built churches and commissioned dedicatory inscriptions in the Mani. The peasants of the area also show signs of modest well-being, which might be used as an indirect indicator of demographic health.¹⁶

The thirteenth century is also the last period during which one may speak of significant land clearance, that is, the act of bringing previously uncultivated land into cultivation. Jacques Lefort has argued persuasively that there was significant demographic and economic development in Macedonia after the tenth century, and other scholars have also posited impressive expansion, including land clearance, in other parts of the empire in the eleventh to twelfth centuries.¹⁷ In the thirteenth century, much of the solid information for that comes from Asia Minor. Especially during the reign of John III Vatatzes, there are indications for a restructuring of property and better organization of production. There is mention of considerable investment in agriculture and animal husbandry and of the establishment of new villages. There is clear evidence of a booming agricultural economy, and there was some land clearance, but it is not certain how much.¹⁸ Land clearance and the placing of uncultivated land under cereal cultivation required some organization, and was probably best done by relatively large units such as a monastery or the state. John Vatatzes is specifically said to have encouraged investment by the aristocracy and the monasteries. Indeed, the imperial farms became models for the organization of other estates.

In Macedonia there is impressive evidence for land clearance at the local level: the inhabited area of the village of Radolibos expanded, between the early twelfth and the mid-fourteenth century, into hilly territory, which necessitated land clearance.¹⁹ Such examples, especially if they can be multiplied, are the best and most trustworthy evi-

¹⁵ S. Kalopissi-Verti, *Dedicatory Inscriptions and Donor Portraits in Thirteenth-Century Churches of Greece* (Vienna, 1992), 33. I owe this reference to Sharon Gerstel.

¹⁶ Kalopissi-Verti, *ibid.*, 35–37. V. Panagiotopoulos thinks that the population decline in the Peloponnese dates from the second half of the 14th century: V. Panagiotopoulos, *Πληθυσμός και οικισμοί της Πελοποννήσου, 13ος–18ος αιώνας* (Athens, 1987), 44.

¹⁷ Lefort, “Rural Economy;” A. Harvey, *Economic Expansion in the Byzantine Empire, 900–1200* (Cambridge, 1989).

¹⁸ *Nicephori Gregorae Byzantina historia*, ed. I. Schopen and I. Bekker, 3 vols. (Bonn, 1829–55), 1:42–45 (hereafter Gregoras); George Pachymérès, *Relations historiques*, ed. A. Failler, 2 vols. (Paris, 1984), 97–99; Skoutareiotès, *Ἀωνόμου Σύνοπις Χρονική*, in K. Sathas, *Μεσαιωνική Βιβλιοθήκη*, 7 vols. (Venice, 1841–1914), 7:506–8; cf. N. Oikonomidès, “The Role of the Byzantine State in the Economy,” *EHB* 1027–28.

¹⁹ Lefort, “Radolibos,” 207ff.

dence of increase of population and expansion of settlement. However, by the late thirteenth century there is no indication of extensive clearance of new lands of the kind that took place in the eleventh to twelfth centuries, when lay and ecclesiastical landlords (e.g., Boilas) cleared tracts of unoccupied and uncultivated land and established new estates.²⁰ For land clearance of abandoned areas, one has to wait until the early fifteenth century, with the intervention of Emperor John VII, who restored to cultivation land in Kassandreia and eventually turned it over to the monks of Lavra, Xeropotamou, Vatopedi, St. Paul on Athos, Pantokrator in Constantinople, and St. John Prodromos in Thessalonike.²¹ This, however, came at the end of a long period of disruption of the population and the productive capacity of the countryside due to enemy invasions, civil war, the plague, and, while it is a sign of an effort to rehabilitate land, it certainly is no sign of large-scale land clearance.

The demographic expansion came to an end in the course of the fourteenth century. In Byzantine Asia Minor, the political and military instability of the first decades of the century seem to have reduced the population. As for Macedonia, there is some question as to when the population began to decline, because the information is not consistent. In any case, the data concerns the *paroikoi* of the monasteries of Mount Athos, and it is not necessary that what is true of them is also true of the population generally. Some villages, such as Radolibos, Melintziani, and Selada, continue to show an increase in the number of households until 1320. Other villages, such as Gomatou, show a decrease. By 1341 the greatest number of villages for which we have information show a decline in the number of households and also a general decline in the household coefficient, with the households losing members. This decline, most evident for the *paroikoi* of the monastery of Iveron, for which we have data reaching to 1341, has been interpreted either as a short-term demographic crisis in a period of overall vitality²² or, on the contrary, as a structural crisis.²³ What is certain is that the population decline becomes catastrophic soon after 1341. By the middle of the fourteenth century, Nikephoros Gregoras could say that the peninsula of Kassandreia, once populous, was “empty of inhabitants”; he was, of course, writing after the ravages of the civil war and the plague.²⁴

It is also certain that the economic situation of the *paroikoi* of Macedonia deteriorated in the course of the first half of the fourteenth century. By whatever measure of wealth one might use—ownership of oxen, ownership of vineyards, ownership of arable land in the villages where *paroikoi* had arable²⁵—the wealth of peasant households declined

²⁰ P. Lemerle, *Cinq études sur le XI^e siècle* (Paris, 1977), 59ff; cf. Lefort, “Radolibos,” 207ff, who speaks of “vastes défrichements,” between the beginning of the 12th century and the middle of the 14th. He notes that in the late 13th century the expansion was into marginal lands. Cf. also Lefort, “Rural Economy.”

²¹ *Lavra*, no. 159, *Dionysiou*, no. 10, and see below, 361–62.

²² *Iveron*, 4.18; Lefort, “Population et peuplement,” 75. Lefort considers that the population increase continued in the first half of the 14th century.

²³ Laiou-Thomadakis, *Peasant Society*, chap. 6.

²⁴ Gregoras, 1:245.

²⁵ On this question, see below, 333ff.

between 1300 and 1320 and also between 1320 and 1341. Indeed, wealth decreased at higher rates than did the number of households, which indicates that the cause of the economic deterioration is not the division of property among the heirs of a head of household.²⁶ Is this a crisis of overexpansion? It has been argued that this was, indeed, the case, and that the expanded population had moved into marginal lands, which produced correspondingly lower revenues.²⁷ This is undoubtedly so in villages with dense settlement; but there were also villages where land was abundant. It must also be noted that there was, in this period, pressure on the peasants to sell their lands and vineyards, not to other peasants but to great landed proprietors, whether lay or ecclesiastic.²⁸ There was, however, no increase in the price of land. Peasants sold at low prices, and the fact that the price of land in the countryside remained stable, or even decreased if the devaluation of the coinage is taken into account, suggests that there was no major overall demographic pressure.²⁹ The impoverishment of the peasantry might also be sought in social and economic factors, primarily in the fact that a significant number of them owned no oxen and no arable land, which, even though there were ways to compensate for it to some extent, was, nevertheless, not conducive either to increase of wealth or to stability.³⁰

Thus, although some villages (the prime example is Radolibos) were very close to the limit of their possibilities as far as population was concerned, in other areas the available arable land went begging for labor. There was a certain competition among landlords for peasant labor. The *eleutheroi*, poor peasants, some of whom worked as day laborers, were in demand, and a number of grants of land include clauses regarding the right of the grantee to install peasants on his land, should he be able to find them.³¹ The land of the monastery of Docheiariou in Rosaion was populated, in 1338, by nine families of newcomers, all of whom bore names that originated from toponyms. In 1341, another nine families of newcomers appear in that village. The village population thus was far below its potential in 1338.³²

Around the middle of the fourteenth century, there was a precipitous demographic decline in Macedonia. Villages were abandoned (the term *palaiochorion*, deserted village, becomes common); others fell to the population levels of the early twelfth century.

²⁶ Laiou-Thomadakis, *Peasant Society*, 203ff, and table V-9; cf. Lefort, "Population et peuplement," 77.

²⁷ J. Lefort and J.-M. Martin, "L'organisation de l'espace rural: Macédoine et Italie du Sud (Xe-XIIIe siècle)," *Hommes et richesses* (as above, note 1), 2:25.

²⁸ Laiou-Thomadakis, *Peasant Society*, 208, 182–85.

²⁹ On land prices, see C. Morrisson and J.-C. Cheynet, "Prices and Wages in the Byzantine World," *EHB* 802–4, table 4.

³⁰ See below, 333ff.

³¹ See, for example, *Les archives de St. Jean Prodrome sur le mont Ménécée*, ed. A. Guillou (Paris, 1955), no. 8; *Actes de Zographou*, ed. W. Regel, E. Kurtz, and B. Korablev, Archives de l'Athos (St. Petersburg, 1907; repr. Amsterdam, 1969), no. X; *Actes de Philothée*, ed. W. Regel, E. Kurtz, and B. Korablev, in *VizVrem* 20 (1913), no. 9 (1346); *Actes de Kutlumus*, ed. P. Lemerle, 2d ed., Archives de l'Athos (Paris, 1988), no. 21 (1348); *Chilandar*, nos. 20 (1304), 30 (1314). Cf. MM, 4:248–49.5.14, and Ostrogorskij, *Problèmes*, 34ff.

³² *Actes de Docheiariou*, ed. N. Oikonomides, Archives de l'Athos (Paris, 1984), no. 19 (1338), and pp. 145–46; cf. *Docheiariou*, no. 20 (1341).

Cultivated land returned to fallow, and the vegetation of the hillsides was regenerated.³³ The reasons for this decline were many. If there was a secular downward trend before 1341, no doubt it contributed significantly to the decline. But there were also catastrophic causes. In the first decade of the fourteenth century, the Catalan raids had caused disruption and dislocation, with some demographic effects which, however, were localized. Similarly, periodic invasions by the Serbs in Macedonia (in the 1280s and the 1290s) and the Tatars in Thrace in 1320, 1321, and 1324, and the first civil war between Andronikos II and Andronikos III (1321–28), must have had very destructive short-term effects.³⁴ The situation, however, became unrelieved after 1341. Insecurity increased exponentially because of the great civil war. John Kantakouzenos' Serbian allies were explicitly out for booty, while his Turkish allies took not only booty but also slaves. Finally, there was the plague of 1347, which is attested in Macedonia as it is on Lemnos, in Constantinople, and in the Peloponnese.³⁵ Although its effects on the countryside can only be surmised, it is safe to assume that it was an important factor in the evident depopulation, especially since it recurred throughout the rest of the century. The short chronicles and other sources show, apart from the great epidemic of 1347–48, outbreaks in 1361–62 in Constantinople and the Peloponnese, in 1373–74 in Arta, in 1380 in Pera, in 1409–10 in Constantinople (with 10,000 dead), in 1422 in the Peloponnese, and in 1424 in Mytilene. A Peloponnesian Short Chronicle gives a dreadful list of nine outbreaks between 1347 and 1431, only to come to a tenth outbreak in 1440.³⁶ In the Peloponnese, there is some evidence of poverty in the late fourteenth century, which could well be due to a decrease in population.³⁷ During the last half century of the existence of the Byzantine state, its territories were too few and dispersed to allow any kind of general discussion; there are signs of the beginning of a demographic recovery in Macedonia, but they are rather weak.

The Village

The village is the most important unit of settlement. It also retained some economic functions, although in most areas these were becoming deeply eroded by the role of the large estate as an organizing factor in production. A village extended over territory that included arable land, vineyards, pasture lands, and uncultivated areas, the proportion of cultivated and uncultivated areas varying from place to place; in Macedonia, the villages of Melintziani and Mamitzon, among others, had a high proportion of arable land, while some villages, such as Krya Pegadia, included mountainous and uncultivable land. The population also varied, some villages being quite large. Thus Goma-

³³ J. Lefort, *Paysages de Macédoine* (Paris, 1986), 105.

³⁴ A. Laiou, *Constantinople and the Latins; The Foreign Policy of Andronicus II, 1282–1328* (Cambridge, Mass., 1972), 281, 291.

³⁵ Lefort, "Population et peuplement," 79–80.

³⁶ P. Schreiner, *Die byzantinischen Kleinchroniken*, 3 vols. (Vienna, 1975), 33/6, 8, 9, 12, 29, 36–37; 7/24; 9/41; 31/6; 89; plagues in 1347–48, 1364–65, 1388–89, 1398.

³⁷ See below, 318.

tou had 537 inhabitants in 1321; the monastery of Lavra had 503 *paroikoi* in Selada in 1300. Radolibos, in the theme of Strymon, was a very large village with a population of approximately 1,000 people.³⁸

Insofar as the economy is concerned, we can discern some functions that villagers undertook together, and we can guess at others. The inhabitants of the village of Dryanoubaina in Thessaly in 1271 decided, by common agreement, to add to their own taxes the tax due on a piece of property, sold to the Maliasenoi by Michael Archontitzes, presumably an inhabitant of the village.³⁹ Villagers of the Mani, also, perhaps, independent smallholders, got together to build small churches in the late thirteenth century. One dedicatory inscription speaks of the restoration of a church, paid for by “the head men [of the village] and the commonality.”⁴⁰ This was, possibly, a village of independent peasants. The inhabitants of a village might act together to cultivate certain lands, or to erect a mill, or to tear one down when they felt that it was encroaching on their territory, as happened in both Asia Minor in the thirteenth century and Macedonia in the fourteenth.⁴¹ They might engage in disputes, both legal and physical, with local landlords; they might harass the local landlords or dispute the right of landlords to levy taxes or rents on them. All of these actions are much more frequent in thirteenth-century Asia Minor than in fourteenth-century Macedonia. The most important, perhaps the richest, peasants of a village, the *protogeroi*, played a role in both the internal affairs of a village and its relations with landlords.⁴²

When a person or an institution received a grant of land, the grant most commonly, in this period, consisted of part or the whole of a village and its inhabitants. If a village belonged to two or more landlords, the economic cohesion could be disrupted, for it was possible for the *paroikoi* of various landlords in the same village to hold their property under different conditions.⁴³ For example, it was possible for some of them to be given land they would cultivate and pay taxes on, while others might have no land of their own but simply farm the domain lands, both with labor services and with tenancy agreements. Such arrangements would, one supposes, tend to reduce the amount of economic cooperation among the peasants. On the other hand, the stark fact that the great majority of peasants (at least of the *paroikoi* of Macedonia, for whom alone we have sufficient information) did not own a team of oxen necessitates economic cooperation by village inhabitants. It is also possible, of course, that the problem was partly solved by the use of animals belonging to the landlord.⁴⁴ Economic cooperation of a different kind may be seen among some households: while the majority of households

³⁸ *Iviron*, 4:19 n. 146.

³⁹ MM 4:391–93, and cf. 396–99.

⁴⁰ Kalopissi-Verti, *Dedicatory Inscriptions*, p. 65, no. 17 (mid-13th century): δηα [συνδρ]ομης του προκριτον κε του κηνου λαου.

⁴¹ Laiou-Thomadakis, *Peasant Society*, chap. 2, esp. pp. 60ff.

⁴² *Ibid.*, 63.

⁴³ Ostrogorskij, *Praktika*, 350–51.

⁴⁴ See below, pp. 334–35.



Last Judgment: men who plow and harvest in the fields of others. Church of St. George near Kouvaras in Attica, fresco, 13th century (after D. Mouriki, "An Unusual Representation of the Last Judgment in a Thirteenth-Century Fresco at St. George near Kouvaras in Attica," *Δελτίον τῆς Χριστιανικῆς Ἀρχαιολογικῆς Ἑταιρείας*, ser. 4, vol. 8 [1975–79]: pl. 89)

consisted of nuclear families, there was a certain number of horizontally extended households, where siblings and their children formed a single fiscal unit and pooled their resources. They might hold patrimonial land undivided, and in that case economic cooperation was a given. The commentary to the novel on *protimesis* begins the discussion of the law with the following statement: “My father and your father were brothers . . . and our parents did not divide their property. We, too, retained the property undivided, . . . and sometimes I cultivated one piece of land and you the other . . . , or we worked the same land together and in common.”⁴⁵

There was, then, economic cooperation among relatives and, we must suppose, among inhabitants of the same village. But in the areas where the large estate was important (everywhere except Epiros and, perhaps, western Greece), the rights and interests of the estate owner also intervened and influenced the organization of the productive activities of the village inhabitants.

Production

A general characteristic of the agrarian economy, not limited to this period, is that, in terms of production this is still, and always, the world of polyculture and polyactivity, with the inherent capability both of serving a self-sufficient economy, or self-sufficient units of production, and, on the other hand, of transcending self-sufficiency through surplus production of staples or through differentially higher investment in marketable crops.⁴⁶ There is, in other words, a combination of auto-consumption and marketability, the proportions of which vary with the terrain, products, conditions, type of tenure involved, and accessibility of markets. In the period under discussion, there were market outlets for almost all agricultural products in virtually all areas. That polyculture is a general phenomenon means that all regions produced some grain and some form of fat (olive oil or butter); all raised some animals, whether oxen, horses, donkeys and mules, or sheep and goats, or pigs. All areas produced garden vegetables; most areas produced wine. Beekeeping may have been a generalized activity too, and fishing was common in areas near the sea or near streams and rivers. The production of industrial crops—cotton, silk, wool, linen, and flax—varied in intensity. It has seemed best to approach the question of production by region and discuss various products in greater detail depending on the region. Because of the state of the sources, the treatment of the various regions is necessarily unequal.

⁴⁵ Zepos, *Jus*, 1:198–204; cf. A. Laiou, *Mariage amour, et parenté à Byzance aux XIe–XIIIe siècles* (Paris, 1992), 148ff.

⁴⁶ On the long-term aspects of this phenomenon in the Greek lands to which, with the exception of Asia Minor, the empire was reduced in this period, see G. Dertilis, “Terre, paysans et pouvoir économique (Grèce, XVIIIe–XXe siècles),” *AnnalesESC* 47 (1992): 273–91. See also M. Aymard, “Autoconsommation et marchés: Chayanov, Labrousse ou Le Roy Ladurie?” *AnnalesESC* 38 (1983): 1392ff.

*Regional Production and Products**Asia Minor*

For Byzantine Asia Minor, the thirteenth century was a period of prosperity, which was interrupted in the late part of the century by the punitive taxation practices of Michael VIII and in the early fourteenth century by the insecurity created by the Turkish advance and by the activities of opportunistic mercenaries of the empire, such as the Catalans.⁴⁷ Bithynia was a rich area, with alluvial soil that produced grain, and with olive trees and olive groves, vineyards, and forests. The region of Smyrna was also very fertile; cereals were cultivated in the plain of Memaniomenos; there were vineyards along the coastland and large flocks in the Maeander valley. The mountain forests produced wood. Oak trees were valuable: they were the object of sale or donation, and in one case the sale involved a group of thirty-six oak trees along with the land on which they grew.⁴⁸ Fruit trees and groves are also attested in the Maeander valley, and mulberry trees are mentioned in 1247 on the properties of the convent of Koteine, near Philadelphia.⁴⁹ However, here as elsewhere, the sporadic mention of mulberry trees should not be taken as a sure indicator of silk production, since the trees are also cultivated for their fruit. Fishing was an important secondary activity, and *vivaria* are mentioned; one, in Smyrna, was important enough to have been granted as a *pronoia*. Salt pans are to be found along the coast, and this is a general phenomenon along the coasts of Macedonia and the Peloponnese as well.⁵⁰ The natural resources of the area included iron and alum. The alum mines of Phokaia were exploited by the Genoese after 1275.

The prosperity of Asia Minor in the thirteenth century was due in considerable part to the economic policies of the Laskarid emperors, who invested heavily in agriculture and animal husbandry. John III Vatatzes, we are told, made it his business to organize properly the production of imperial estates and encouraged others to do the same, so that the empire of Nicaea would be self-sufficient.⁵¹ The monastery of Lembiotissa was only one of the landlords who were supported and encouraged by John Vatatzes. In 1228 he restored the church, built cells and a refectory, and gave to the monastery villages and *paroikoi*. He also confirmed in the property of the monastery a *vivarion* that the monks had created at their own expense, two water mills, and some olive trees,

⁴⁷ For Asia Minor, see H. Ahrweiler, "L'histoire et la géographie de la région de Smyrne entre les deux occupations turques (1081–1317), particulièrement au XIIIe siècle," *TM* 1 (1965): 2–204, esp. 17ff; M. Angold, *A Byzantine Government in Exile: Government and Society under the Lascaris of Nicaea (1204–1261)* (Oxford, 1975), 102ff; J. Lefort, "Tableau de la Bithynie au XIIIe siècle," in *The Ottoman Emirate, 1300–1389*, ed. E. Zachariadou (Rethymnon, 1993), 101–17; and Matschke, "Commerce."

⁴⁸ MM 4:94 (1274), 112–13, 122–24, and A. Dunn, "The Exploitation and Control of Woodland and Scrubland in the Byzantine World," *BMGS* 16 (1992): 235–98, esp. 277.

⁴⁹ P. Schreiner, "Die Produkte der byzantinischen Landwirtschaft nach den Quellen des 13.–15. Jh.," *BHR* 10 (1982): 93.

⁵⁰ See MM 4:1–4, 26–28, 242–44, 48–51.

⁵¹ See below, 348, and Matschke, "Commerce."

again restored or planted by the monks. He confirmed to them the full ownership of everything they possessed or might acquire: an important incentive to further investment. Gregoras mentions the grant of estates to monasteries in the context of John Vatatzes' agrarian reforms.⁵² As a result of the efforts of the Nicene emperors, there was a surplus of wheat, barley, wine, and oil and large numbers of flocks; grain was stored in great warehouses and exported to the Seljuks.

If grain was an important commodity and one that, under the Laskarids, was plentiful, the cash crops of the area were, as they had always been, olive oil and wine. Olive trees seem to have been owned by the great majority of the inhabitants of the hilly region behind Smyrna, both peasants and landlords, although it has been observed that olive trees, vineyards, and fruit trees were much more the domain of small peasant proprietors than of the great landlords who had the grain-producing estates.⁵³ Acts of sale and donation involve olive trees in significant numbers: occasionally we find a sale or donation of two or three trees, but more frequently there are ten, twenty, thirty, or forty trees. Since ten to twelve olive trees sufficed for the needs of a household,⁵⁴ the donors or sellers, who included peasants and small and large landowners, clearly owned olive trees in numbers that far exceeded the needs of domestic consumption.⁵⁵ The small monastery of St. Panteleemon had 164 olive trees, which later became part of a *metochion* of Lembiotissa. The *metochion* also included a small parcel of arable land (more than 40 modioi), 1 modios of vineyard, one ox, one donkey, fruit trees, and thirty beehives.⁵⁶ Clearly, there was production for the market, both by the peasantry and by landlords.

The prosperity of Byzantine Asia Minor began to decline in the late thirteenth century. It had been partly based on a population increase, which was hard to sustain in the troubled political times of the 1280s, and later, especially after the battle of Bapheus, in 1302. Already in the 1260s, the inhabitants of Paphlagonia and other areas of Asia Minor claimed a shortage of cash when Michael VIII imposed punitive taxes on them, and the correspondence of Gregory of Cyprus shows Asia Minor to have been a troubled province.⁵⁷ In the fourteenth century, there was still export of wine from Bithynia,⁵⁸ but the level of agricultural production must have fallen off very considerably. There is evidence, at the same time, of relative prosperity in Turkish-occupied Asia Minor, an indication of the importance of peace.⁵⁹

⁵² MM 4:1–4.

⁵³ Angold, *Lascarids*, 103.

⁵⁴ M. Kaplan, *Les Hommes et la terre à Byzance du VIe au XIe siècle: Propriété et exploitation du sol* (Paris, 1982), 505 n. 114.

⁵⁵ In one case, a family group donates to Lembiotissa seven out of the fourteen trees it owned: MM 4:136–37 (1279).

⁵⁶ MM 4:56–57.

⁵⁷ Pachymeres, ed. Failler, 293.

⁵⁸ See Matschke, "Commerce."

⁵⁹ E. A. Zachariadou, "Notes sur la population de l'Asie Mineure turque au XIVe siècle," *ByzF* 12 (1987): 228ff.

The Despotate of the Morea

This is an area for which we possess a fair amount of data regarding agricultural production.⁶⁰ The survival of better source material gives us much more information for the territories of the principality of Achaia, which kept dwindling in our period.⁶¹ While the economy of Frankish possessions falls outside our purview, reference will occasionally be made to these areas, which, in terms of products, were probably not unlike the despotate of the Morea.

While wheat was produced in, and even exported from, the despotate of the Morea, this was not primarily a grain-producing region.⁶² The most important agricultural products in which it specialized were wine, including the already famous Malvasia wine, and olive oil, produced in considerable quantities. In the twelfth century, the southern Peloponnese was said to be among the greatest producers of olive oil in the world.⁶³ The cultivation of the vine was important in areas around Corinth and Patras, among others, and currants were an export item. The *paroikoi* of Latin-held areas paid a special tax, called *mostoforia*, on the production of must or young wine.⁶⁴ Fruit trees and the products of the forest, including wood for construction, are also mentioned. In the early fifteenth century, George Gemistos Plethon speaks of the despotate of the Morea as a primarily agricultural land, where the great majority of the inhabitants engaged in agriculture and some in animal husbandry.⁶⁵

Industrial crops were cultivated in the despotate of the Morea, as in the Frankish possessions. They were primarily products connected with the manufacturing of textiles. Raw silk was produced in the Morea, as it had been throughout the Byzantine period, in what seem to be important quantities. From the documentation regarding the Frankish possessions, it appears that mulberry trees were grown in much of the country but, surprisingly, not around Corinth, which in the twelfth century had been

⁶⁰ On the Peloponnese, see P. Lemerle, "Une province byzantine: Le Péloponnèse," *Byzantion* 21 (1951): 352–53; I. Medvedev, *Mistra: Ocherki istorii i kultury pozdnevizantiiskogo goroda* (Leningrad, 1973), 81–94; D. A. Zakythinos, *Le despotat grec de Morée*, vol. 2, *Vie et institutions*, 2 vols. (Athens, 1953), ed. and rev. C. Maltézou (London, 1975).

⁶¹ J. Longnon and P. Topping, *Documents sur le régime des terres dans la principauté de Morée au XIV^e siècle* (Paris, 1969), is a major source, covering the 14th century. See also P. Topping, "Le régime agraire dans le Péloponnèse latin au XIV^e siècle," *L'Hellénisme contemporain*, 2d ser., 10 (1956): 255–95; cf. D. Jacoby, "Les états latins en Romanie: Phénomènes sociaux et économiques (1204–1350 environ)," *XV^e Congrès international d'études byzantines: Rapports* (Athens, 1976), 11ff.

⁶² The documents from the Latin part of the Morea mention, along with wheat, barley, oats, and millet (see, e.g., Longnon and Topping, *Documents*, 210ff).

⁶³ H. Lamprecht, *Untersuchungen über einige englische Chronisten des zwölften und des beginnenden dreizehnten Jahrhunderts* (Torgau, 1937), 117; *ODB*, s.v. "Olive." On Malvasia wine and generally on the crops of the hinterland of Monemvasia, see H. Kalligas, "Monemvasia, Seventh–Fifteenth Centuries," *EHB* 872–75. For Malvasia wine produced in and exported from Crete, see Zakythinos, *Despotat*, 2:173, 249–50.

⁶⁴ Longnon and Topping, *Documents*, 271.

⁶⁵ S. Lambros, *Παλαιολόγεια καὶ Πελοποννησιακά*, 4 vols. (Athens, 1912–30), 3:251; for details, see Zakythinos, *Despotat*, 2:245ff.

a major center of silk production and manufacturing.⁶⁶ D. Jacoby connects the interruption of silk growing in the countryside around Corinth to the insecurity resulting from Turkish raids after 1327. In the Frankish areas, peasants owned mulberry trees, but there is also evidence of seigneurial workshops in villages, presumably for rearing cocoons and reeling the silk.⁶⁷

The production of raw silk in the despotate of the Morea is mentioned throughout the period. In 1296 a Greek from Great Arachova sold silk at the fair of Vervena, between Andritsaina and Karytaina. He was a member of the well-known Greek family of Crocodiloi or Arcocondiloi, an aristocratic family that produced a number of officials in the fourteenth century, and whose members had extensive landed possessions. In 1381 John Laskaris Kalopheros appeared in Modon with 2,773 light pounds of raw silk, which may have come from the domains of his father-in-law, Erard III Le Maure, lord of Arkadia.⁶⁸ The despots of the Morea exported raw silk well into the fifteenth century, placing a special tax on it.⁶⁹

Raw materials for other textiles were also produced in the Morea: wool, cotton, and linen are mentioned by Plethon in the first half of the fifteenth century.⁷⁰ Connected to the production of textiles was the collection of dyeing agents: purple and kermes (*prinokokkion*, *grana*, cochineal, a parasite of the holly oak, which was collected in the plain of Helos and undoubtedly elsewhere). Acorns, useful for the tanning industry, were collected and exported.⁷¹ These activities, involving the by-products of woods and scrubland, must have been important, for they formed the object of imperial monopolies and imperial grants. In 1301 Andronikos II gave to the metropolis of Monemvasia, in the southern Peloponnese, a church, with its *paroikoi* and *autourgia*, including an oakwood and the right to the acorns. The church was also granted the right to sell the *prinokokkion* collected by its *paroikoi* on its own lands, while the *prinokokkion* collected by the same *paroikoi* on state oakwoods still belonged to the state.⁷²

The Byzantine Peloponnese may have enjoyed a modest prosperity in the thirteenth and the first half of the fourteenth century. In special cases, that is, in Monemvasia, prosperity derived from trade.⁷³ In the peninsula as a whole, it must have derived from

⁶⁶ D. Jacoby, "Silk Production in the Frankish Peloponnese: The Evidence of Fourteenth-Century Surveys and Reports," in *Travellers and Officials in the Peloponnese: Descriptions—Reporters—Statistics*, ed. H. Kalligas (Monemvasia, 1994), 41–61.

⁶⁷ *Ibid.*, 51–52. For the involvement of peasants in the production and cultivation of cocoons and raw silk, cf. C. Hodgetts, "Venetian Officials and Greek Peasantry in the Fourteenth Century," in *Kathegetria: Essays Presented to Joan Hussey for Her 80th Birthday* (Camberley, 1988), 481–99.

⁶⁸ Zakythinios, *Despotat*, 2:253–54, and 1:65. Cf. Matschke, "Commerce," 764; Jacoby, "Silk Production."

⁶⁹ See the privileges of the Ragusan merchants with regard to the duties on silk, Lambros, *Παλαιολόγια καὶ Πελοποννησιακά*, 4:29 (1431).

⁷⁰ *Ibid.*, 3:263.

⁷¹ Zakythinios, *Despotat*, 2:247; W. Heyd, *Histoire du commerce du Levant au moyen âge*, 2d ed., 2 vols. (Leipzig, 1936), 2:607ff.

⁷² Dunn, "Exploitation," 275; on *prinokokkion*, see *ibid.*, 290–91. For the privilege, see Zepos, *Jus*, 1:526–27.

⁷³ See Matschke, "Commerce," and Kalligas, "Monemvasia."

agriculture. Inscriptions from churches in the Mani, an area where the main, almost the only, crop is olives, show that peasants were able to contribute a little money and resources to the building of churches. The sums were minimal, ranging from $\frac{1}{4}$ of a nomisma to 1 nomisma (with 8 nomismata from the *anagnostes*), but at least the peasants could afford them. In a church in the Mesa Mani, the inscription lists donations in kind. They consist of olive trees ($\frac{1}{3}$ –4 trees), vegetable plots (of $\frac{1}{4}$ modios), tiny plots of arable ($\frac{1}{4}$ – $\frac{1}{2}$ modios), and a threshing floor.⁷⁴

Brief global views of the agrarian economy of the despotate in the fifteenth century are provided by the inquest of the Venetian Dolfino Venier into the resources of the area (1422) and by the writings of Plethon in the early fifteenth century. In 1422 the Venetians heard that the Morea produced silk, honey, wax, grain, fowl, and raisins, and that it had silver and lead mines. These resources were still not sufficient, in the eyes of the Signoria, for it to accept the Morea, which was offered them by the emperor and the despot.⁷⁵ Later in the century, Plethon singled out cotton as an important product, but also spoke of wool, linen, and flax.⁷⁶ The specialties of the area, both industrial products and olive oil, wine, and raisins, were the important items of export to Italy.

The agricultural production of the Morea was to some degree geared to the needs of the Italian trade network, which exported raw materials and imported manufactured cloth. Both Bessarion and Plethon railed against this situation; I think it very likely that the demands of Italian trade had, to some degree that is difficult to quantify, influenced agricultural production by promoting a certain orientation toward industrial crops.⁷⁷ It goes without saying that this production served the needs of western European textile manufacturing, while that of the Peloponnese itself had declined, and had probably become limited to the household production of cheap items in the villages.

Did prosperity decline in the second half of the fourteenth century? Demetrios Kydones wrote, sometime between 1383 and 1387, that the Peloponnese was a poor land, hardly able to feed its inhabitants.⁷⁸ In any case, exports of wheat do not necessarily mean that the entire population is well fed; they can mean that the population is squeezed. Plethon spoke against the export of grain, saying that the inhabitants themselves faced shortages.

⁷⁴ Kalopissi-Verti, *Dedicatory Inscriptions*, nos. 19 (1265), 21a (1278), and cf. no. 20.

⁷⁵ Marin Sanuto, *Vitae Ducum Venetorum*, in *Rerum Italicarum Scriptores*, ed. L. A. Muratori (Milan, 1733), 22:943.

⁷⁶ Lambros, *Παλαιολόγεια καὶ Πελοποννησιακά*, 3:263.

⁷⁷ Plethon: Lambros, *Παλαιολόγεια καὶ Πελοποννησιακά*, 3:263; Bessarion: *ibid.*, 4:41 (against the export of grain). Cf. Jacoby, "Silk Production," 58–59, who argues that the Italians were responsible for a more market-oriented approach to the production of certain commodities, including silk. On the similar, but much greater, effects of the Italian trade system on the agricultural production of Syria, see E. Ashtor, *Levant Trade in the Later Middle Ages* (Princeton, 1983), *passim*.

⁷⁸ *Démétrius Cydonès, Correspondance*, ed. G. Cammelli (Paris, 1930), 85; Lemerle, "Une province byzantine," 252–53, is of the opinion that the Peloponnese was a poor part of the Byzantine Empire.

Epiros and Thessaly

These areas were linked by sometimes common political developments and also by the fact that the ports of Epiros served as outlets for the grain of Thessaly.⁷⁹ Having different geographic features from each other, they produced different crops. Thessaly, with its great plains, was an important center of wheat production; its wheat was marketed from Demetrias, Halmyros,⁸⁰ and Pteleon⁸¹ and also from Arta, from which it was exported to Italy and Ragusa. Vine cultivation also seems to have been important, in the area around Volos for example. Thessaly was a land where the large estate was predominant, although we do not have much information about the details of the organization of agricultural activity.⁸² We do know, however, that, when Nicholas Angelos Komnenos Maliasinos and his wife, Anna Doukaina Komnene Palaiologina, the niece of Michael VIII, founded the convent of Nea Petra, they bought land from Michael Archontitzes, land whose yearly taxes the inhabitants of the village of Dryanou-baina agreed to pay, so that the convent would get it free of fiscal burdens. A little later, they acquired the vineyards and lands of peasants who had possessions in the vicinity, and who sold at a very low price, disguising part of the sale as donation.⁸³ While the sellers invoked their poverty as the reason for selling their lands, and at low prices, in 1272 Michael VIII confirmed the possessions of the monastery of Makrinitissa, also founded by Nicholas Maliasinos. The monastery had, in Demetrias, arable land, vineyards, pasture land, peasants, boats for fishing as well as the fishermen who owned them, and so on. We see here the transformation of small landholdings into estates.⁸⁴

In Epiros there were vineyards near Ioannina and Arta.⁸⁵ In the south, in Aetolia, silk was produced in Naupaktos, at least in the early thirteenth century. The same source praises the fish and citrus fruit of the area.⁸⁶ Animal husbandry was particularly well developed in Epiros. When, in 1336, Andronikos III attacked the Albanians in the mountainous areas around Berat and Kanina, going as far as Durrazzo, his booty is said to have included 300,000 oxen (a huge number for such terrain), 5,000 horses,

⁷⁹ E. A. Zachariadou, "Παραγωγή και εμπόριο στο δεσποτάτο τής Ηπείρου," in Πρακτικά Διεθνούς Συμποσίου για τό Δεσποτάτο τής Ηπείρου (Arta, 1992), 87–93, esp. 89–90.

⁸⁰ See, for example, M. Balard, *La Romanie génoise, XIIe– début du XVe siècle*, 2 vols. (Rome, 1978), 1:164 n. 212.

⁸¹ B. Ferjančić, *Tesalija u XIII i XIV veku* (Belgrade, 1974), 277–78.

⁸² On Thessaly, see Ferjančić, *Tesalija*, and idem, "Posedi poroditse Maliasina u Tesaliji," *ZRVI* 9 (1966): 33–48; I. Sokolov, "Krupnye i melkie vlasteli v Fessalii epokhi Paleologov," *VizVrem* 24 (1923–26): 35–44.

⁸³ *MM* 4:391–99, 399–402, 402–4, 404–6, 407–9, 410–11, 412–14 (1271).

⁸⁴ *MM* 4:330–32 (1272), and cf. 333–36 (1274), which mentions two mills as well. On Thessaly, see Ostrogorskij, *Féodalité*, 93–99.

⁸⁵ The acts of Demetrios Chomatianos and John Apokaukos, in the early 13th century, have frequent mentions of vineyards and, of course, of arable land. See, for example, A. Papadopoulos-Kerameus, "Συνοδικά γράμματα Ἰωάννου τοῦ Ἀποκαύκου," *Byzantis* 1 (1909): 28–30.

⁸⁶ N. Bees, "Unedierte Shriftstücke aus der Kanzlei des Johannes Apokaukos des Metropolitens von Naupaktos (in Aetolien)," *BNJ* 21 (1971–76): no. 67, pp. 124–25.

and 1,200,000 sheep.⁸⁷ As a para-agricultural activity, one might mention the production of salt in Naupaktos and elsewhere.⁸⁸ As is the case with Thessaly, the structure of agricultural production in Epiros is not easy to study in detail because of lack of documentation. The extant thirteenth-century sources give the impression that this, and western Greece generally, was an area where small independent landholders, whether peasants or others, with moderate means, formed an important part of the population. Such people appear not infrequently in the courts of Chomatianos and Apokaukos. Apokaukos mentions peasants who move with their flocks and carry flour with them, and peasants who are in despair because some sickness has struck their oxen and they cannot thresh their grain.⁸⁹

Macedonia and Thrace

The best-studied (and easiest to study) region in the Palaiologan period is Macedonia. This is primarily due to the wealth of material that may be found in the archives of the monasteries of Mount Athos. The period of Latin rule is very poorly represented, and little can be said about it. On the other hand, the decisions of Demetrios Chomatianos, archbishop of Ohrid, provide some information on western Macedonia in the early thirteenth century. The economy of Macedonia and Thrace was relatively well articulated during the first eighty years of Palaiologan rule. There was still relative security, despite periodic invasions and the first civil war. The roads were open, toward both Constantinople and Belgrade, as were communications by sea, and cities were connected to their agricultural hinterland.⁹⁰ In the 1340s and after, insecurity became endemic because of the great civil war and the Serbian and Ottoman invasions. Land communications between Macedonia and Thrace and Constantinople were interrupted, and the cities were cut off from their hinterland for long periods of time. Demographic decline, in part due to the bubonic plague, had adverse effects as well.

The main crop of Macedonia and Thrace was cereals. There was wheat, summer wheat, and barley. Grains for fodder (vetch, rye, millet) were also cultivated.⁹¹ Millet was used mostly for animals, although poor people also ate it. The best wheat of the

⁸⁷ *Ioannis Cantacuzeni Historiarum libri quattuor*, ed. L. Schopen (Bonn, 1828–32), 1:497–98 (hereafter Kantakouzenos); A. Laiou, “In the Medieval Balkans: Economic Pressures and Conflicts in the Fourteenth Century,” in eadem, *Gender, Society and Economic Life in Byzantium* (Aldershot, 1992), art. 9, p. 149.

⁸⁸ Zachariadou, “Παραγωγή,” 91. For the production of wheat, wine, cheese, and fruit, see S. C. Estopañan, *Bisancio y España: El legado de la basillisa Maria y de los despotas Thomas y Esau de Joannina* (Barcelona, 1943), 2: § XII.

⁸⁹ Bees, “Unedierte Schriftstücke,” no. 107 (1218–19); S. Pétridès, “Jean Apokaukos, Lettres et autres documents inédits,” *IRAIK* 14 (1909): 75–76; D. Angelov, “Prinos kum narodnostinite i pozemelni otnošenija v Makedonija (Epirskija Despotat) prez purvata cetrvurt na XIII vek,” *Izvestija na kamarata na narodnata kultura, serija: Humanitarni nauki* 4.3 (1947): 3–46. Ostrogorskij, *Féodalité*, 88ff, stresses the importance of *pronoia*-holders, with dependent peasants, in the Despotate of Epiros.

⁹⁰ Laiou, “The Economy of Byzantine Macedonia.”

⁹¹ Laiou-Thomadakis, *Peasant Society*, 26ff; cf. Lefort, “Rural Economy,” 244ff.

empire, according to Pegolotti, was the wheat of Rhaidestos, that is to say, of the Thracian hinterland.⁹² Legumes were produced as part of the alternation of cultures. Vineyards were widespread, in both the Chalkidike and the theme of Strymon.⁹³

Fruit trees are widely attested: fig trees, pear trees, walnut, almond, and cherry trees, as well as mulberry trees, perhaps attesting to the production of raw silk, although in quantities that cannot have been great. Considerable numbers of fruit trees grew in the fertile Strymon valley. Olive trees did not grow north of the Chalkidike, and the number of such trees mentioned even in that peninsula is small. Rice, which was cultivated in Crete in the fourteenth century, is not attested in Thrace or Macedonia. Linen, cotton, and flax are attested, but it is not possible to estimate how important their production was. Cotton was exported from Thessalonike during the first decade of the fifteenth century.⁹⁴ Salt pans existed in Macedonia and Thrace.

While bee-keeping and fishing⁹⁵ were supplementary occupations of the inhabitants, the raising of flocks and cattle was an important activity. Oxen and buffaloes were used for agriculture, and they were owned by both landlords and peasants. We also find cows, mules, and donkeys. Large-scale rearing and ownership of cattle and horses seems to have taken place on the estates of great landlords.⁹⁶ Peasant households also owned pigs, sheep, and goats. In some villages, animal husbandry seems to have been an important activity. Such was the case in villages of the eastern Chalkidike, especially in the interior. Thus the village of Gomatou had 1,193 sheep in 1300–1301, and Selada had more than 500 sheep and goats. The peninsula of Sithonia seems to have had winter pastures. In the area close to Mount Pangaion, peasants raised cattle near the plains and sheep closer to the mountain. Many poorer peasants were exclusively employed in animal husbandry.⁹⁷ The importance of animal husbandry is attested by the high value placed on meadow lands that produced fodder for the winter. In the eleventh century, as in the thirteenth, irrigated meadowland (λιβάδιον χορτοκοπούμενον, ὑποπότιμος ὀλοκαιρινός) was more valuable than first-quality arable land.⁹⁸

The products of woods and forests were important for household consumption (firewood), for the feeding of pigs, and for the secondary sector of agricultural activity: the felling of timber and the collection of raw materials for tanning, dyeing, and medicinal purposes. It has been observed that the products of woods and scrublands were eminently tradable, and indeed trade in firewood and timber is attested on Mount

⁹² F. Balducci Pegolotti, *La pratica della mercatura*, ed. A. A. Evans (Cambridge, Mass., 1936), 42.

⁹³ N. K. Kondov, "Produktionsorganisatorische Verschiebungen bei dem Weinbau in der ersten Hälfte des XIV. Jahrhunderts im Gebiet des unteren Strymons," *EtBalk* 9.1 (1973): 67–76; Schreiner, "Die Produkte," 88–95.

⁹⁴ A. Laiou, "Η Θεσσαλονίκη, η ενδοχώρα της και ο οικονομικός της χώρος στην εποχή των Παλαιολόγων," *Βυζαντινή Μακεδονία, 324–1430* (Thessalonike, 1995), 190.

⁹⁵ See, for example, *Kulturnus*, nos. 43, 46; *Lavra*, 4:163; *Zographou*, no. 29.

⁹⁶ See below, 348–49.

⁹⁷ B. Ferjančić, "Stočarstvo na posedima svetogorskih manastira u srednjem veku" *ZRVI* 32 (1993): 35–127.

⁹⁸ See Table 2, below. On the 11th century, see Oikonomidès, "Role of the State," 973ff.

Athos from the first centuries of its history. In the fourteenth century, some timber was exported to the West.⁹⁹

The Organization of Production

The developments of the twelfth century¹⁰⁰ obtain in the subsequent period as well. In all the Byzantine regions, except possibly for Epiros and western Greece, the large estate—lay and, increasingly, ecclesiastical—plays an important role. Small independent peasant holdings existed but appear to have had difficulty surviving, while the residents of cities also held land in the countryside, usually rented out or cultivated by agricultural laborers. In Macedonia and Thrace, the areas richest in cereals, the estate, cultivated by *paroikoi*, was a dominant form of organization of production and will be discussed first. In this period, we have a wealth of documentation, including *praktika*, census records that list the holdings of a landlord, lay or ecclesiastical, in detail; the *praktika* also list the properties held by and dues paid by the *paroikoi*. By far the fullest documentation comes from the archives of Mount Athos and refers to Macedonia and the island of Lemnos. For that reason, most studies have focused on Macedonia; the existence of large amounts of information has made it possible for scholars to undertake quantitative analysis of the population, the production, the crop yields, the size of holdings, the tax rates, and the revenues of both large and medium-sized estates. However, scholars are not always in agreement, and a number of questions remain open. Given the state of the documentation, Macedonia will necessarily remain the focus of the investigation here, although information from other areas will be used to clarify and corroborate arguments, or to show that different possibilities and configurations existed.

The question of estate organization of production will be introduced through the data offered by the *praktikon* for the village Mamitzon near Constantinople. In 1322, two-thirds of the village was granted by Andronikos II to a hospice founded in Constantinople by Stefan Uroš II, while the remaining third was to be given to Hilandar. A document dated 1323 lists the revenues of this third portion of the village.¹⁰¹ There were 36 peasant households, which paid a total base tax of 66 hyperpyra (see Table 1). Supplementary taxes are also listed. One-third of the revenues of two winter water mills and half a windmill yielded 10 hyperpyra; the rent of a garden of 8 modioi amounted to 4 hyperpyra, and one-third of a meadow yielded 1 hyperpyron. The third portion of another meadow yielded 3 hyperpyra. All of the peasant households possessed some arable land, whether from hereditary possession (no. 1) or from dowry (no. 10), or ἀπὸ (διὰ) παραδόσεως. It is clear that a sort of distribution had taken place, in the course of which some peasants kept a part of the land they were already holding

⁹⁹ Dunn, "Exploitation," esp. 255. For western Macedonia, see V. Kravari, *Villes et villages de Macédoine occidentale* (Paris, 1989), 28–29.

¹⁰⁰ Lefort, "Rural Economy."

¹⁰¹ *Chilandar*, nos. 82 (1322), 92 (1323), pp. 194–98. On this, see Ostrogorskij, *Praktika*, 317–18.

(nos. 13, 19, 21, 29), while others were given land. In one case, no. 31, a peasant was granted 15 modioi of land “from that which he had cleared.” The peasants also held vineyards, gardens, and threshing grounds.

Of the 36 households, 22 had oxen: 17 had one pair each, and 5 had a single ox each. The plots of arable land held by the *paroikoi* had some connection to the ownership of oxen, but certainly not a clear or consistent one: the household of Theotokios Tzalkanakas, who had no oxen but held 80 modioi, is an outlier, as is that, at the other end, of George, son of Constantine Zymaras, who had a pair of oxen but only 20 modioi of arable (nos. 2 and 29). On the average, the households without oxen held 22.6 modioi of arable, those with one ox held 70 modioi, and, surprisingly, those with a yoke of oxen held almost the same quantity on average (67 modioi).

After the list of the households of the *paroikoi*, with the tax they paid to the landlord, the *praktikon* proceeds to the arable land of the landlord. What is unique is that it also mentions the terms on which the domain land is to be cultivated. There are 600 modioi of “best-quality land, which is to be cultivated “through the corvée (*angareia*) of the *paroikoi*.” Its revenues are 24 hyperpyra, that is to say, 1 hyperpyron per 25 modioi. The rest of the land, 1,500 modioi, is ὑπόμορτος γῆ, that is, cultivated by sharecroppers. Its revenues are 30 hyperpyra, which comes to 1 hyperpyron per 50 modioi. Both of these figures represent fiscal revenues: they are the tax that this land would have paid to the state, which is now yielded to the landlord. The real revenues, which would come from the production, are not mentioned here, or in any other *praktikon*. While the rate of 1 hyperpyron per 50 modioi is normal for the fourteenth century, it is extremely rare to find two different rates, as we have here. Presumably the “best-quality land” is taxed differently not only because it is best quality, but also because, being cultivated by corvée labor, it yields higher revenues.

We thus have three different forms of exploitation of the land and distribution of the surplus. The peasants own land, and they pay a tax on their possessions, presumably at the rates that have been statistically established as common in Macedonia.¹⁰² That tax goes to the landlord, who has no other claim on the production of the *paroikoi*. Domaniel land is larger than that held by the peasants (2,100 modioi as against 1,812 modioi). Of that land, 29% is cultivated by the corvée labor of the *paroikoi* and is thus domaniel land under direct exploitation. The rest is rented out—to the same *paroikoi* or to others? The landlord would keep all of the revenues of the first group of lands and a share of the production of the second group. How does this compare to the earlier situation, how much corvée labor was involved, and how much of the share of the produce did the landlord receive in a sharecropping arrangement? Were the arrangements implied by the *praktikon* of Mamitzon typical, even though the clear division between land cultivated by labor services and land under sharecropping is not found elsewhere?

The interpretation of the *praktikon* of Mamitzon is helped, to some extent, by the

¹⁰² Lefort, “Fiscalité.”

Table 1
The *Paroikoi* of Mamitzon

Household	Lines	People	Houses	<i>Zeugarion</i>	Vineyard (modioi)	<i>Ampelotopion</i> (modioi)	Land (modioi)
1	18-22	3	1	1	2.25		50
2	22-23	2	1	—	—		80
3	23-26	4	1	—	—		17
4	26-30	5	3	1	2		104
5	30-33	6	1	0.5	1		60
6	33-36	4	1	—	1.15		37
7	36-38	2	1	—	—		15
8	38-41	5	2	1	5		74
9	41-44	2	2	1	2.15		55
10	44-48	2	1	1	1.33		55
11	48-51	2	1	—	2	1.5	16
12	51-53	3	1	0.5	1.5		27
13	53-57	8	2	1	2.33		85
14	57-62	2	1	0.5	0.5		120
15	62-64	4	1	1	1	1.5	94
16	64-66	4	1	—	—		15
17	66-69	5	2	0.5	4		74
18	69-70	1	1	—	—		8
19	70-72	3	1	—	—		33
20	72-75	4	1	1	1		30
21	75-77	2	1	^(a)	1.33		25
22	77-79	2	1	—	1.33		10
23	79-82	3	2	1	3.33		81
24	82-86	6	2	1	8		70
25	86-89	4	1	1	4.33	1	50
26	90-91	3	1	—	—		17
27	91-93	3	1	—	2		14
28	94-97	5	1	1	3.25		76
29	97-100	4	1	1	1.66		20
30 ^b	100-03	3	1	1	4		110
31	103-05	3	1	—	—		15
32	105-12	5	2	1	—		80
33	112-18	3	2	1	3	0.67	50
34	120-25	3	1	1	1		60.5
35	125-27	4	1	0.5	—		70
36	127-29	3	1	—	—		15
Total		127	46	19.5 ^c	60.44		1,812.5

continued

Table 1
(continued)

<i>Telos</i> (hyperpyra)	Cows	<i>Alonotopion</i>	<i>Esokepion</i> (modioi)	<i>Kepotopion</i> (modioi)	Donkeys	<i>Esoperibolion</i>
2						
2.5						
0.5	1					
3	2	+	2	0.25		
2						
1.33						
0.5					1	
3.5	1		0.1			
2	1					
2		+				
1						
1						
3	1			0.25		
3						
3	1					
0.5						
3						
0.25						
1						
1						
1						
0.5						
3	1					
4				0.25		
2.5	1					
0.5						
1						
2.5			0.075			
1						
4						0.2
0.5	1				1	
2.5				0.25		
2						
2						
2						
0.5						
65.58						

Note: A first version of this table was made by S. Dmitriev, in seminar.

^a One horse. ^b He has 6 mills. ^c 17 *zeugaria* and 5 single oxen.

Ratios: Oxen per household: 1:1; arable land of *paroikoi* per ox: 46 modioi: 1.

information furnished by a curious fiscal document, the so-called *Apokope ton psomion*, which seems to have originated in Cyprus in 1232.¹⁰³ At the time, Cyprus was firmly under Latin occupation, but undoubtedly this document incorporates earlier practices. The *Apokope* establishes, like earlier fiscal documents, the value of land according to quality. The valuation is different from that of the eleventh century, since the best-quality land is valued at $1\frac{3}{4}$ modioi per hyperpyron, not 1 modios per hyperpyron. First-quality land is taxed at the rate of 1 hyperpyron per 48 modioi, not very different, proportionately, from the tax of the eleventh century, which was an *ad valorem* tax of $\frac{1}{24}$ of the value of the land, that is, 1 nomisma for 24 modioi of first-quality land (see Table 2A). It will be noted that we are very close to the tax of 1 hyperpyron per 50 modioi that was common in the fourteenth century, but here it affects only first-quality land. The document also places a value on the peasants, according to the number of oxen they possess; here the value is higher than in the eleventh century—a result of the devaluation of the coinage, or a particularity of the locality. More interestingly, the document instructs the tax official to proceed to an *hikanosis*: the peasants are registered, and then the land of the unit is registered; the peasants are given land according to their labor force, and the remaining land is evaluated according to its quality.

An estate, according to the *Apokope*, consists, basically, of the workforce and the arable land, although sheep, vineyards, and olive trees are also mentioned. Each peasant household has its own land, granted it by the fiscal official from the totality of the land of the estate. The bulk of the land remains in the hands of the landlord, that is, it is domanial land. The size of the peasant plots is given, for the first time in a semi-official fiscal document: a *pezos* (who owns no oxen) is to be given 20 modioi of land, a peasant with one ox gets 30 modioi, and a peasant with a pair of oxen gets 40 modioi. The figures differ significantly from those of the *praktikon* of Mamitzon: only the 20 modioi of a *pezos* are close to the average holding of a peasant with no oxen in Mamitzon, while the figures for the peasants with one or two oxen are significantly lower than those we encounter in Mamitzon. This, however, is quite to be expected, for local variations are unavoidable, and, as we shall see below, even within Macedonia the holdings of peasants varied widely. What is more important is the principle that underlies the *Apokope*. Surely, if a peasant could cultivate 20 modioi of land without any animals, a *zeugaratos* was capable of cultivating much more than the 40 modioi allotted to him. Therefore, the peasants were also expected to cultivate the domanial land. At the end

¹⁰³ It is published, though not very well, by Th. Uspenskii, “Vizantiiskie zemlemery,” *Trudy VI. Archeologicheskogo s’ezda v Odessa* (Odessa, 1888), 2:302–8, and S. Lambros, “Κυπριακὰ καὶ ἄλλα ἔγγραφα ἐκ τοῦ Παλατινοῦ κώδικος 367 τῆς βιβλιοθήκης τοῦ Βατικανοῦ,” *Νέος Ἑλλ.* 15 (1921): 345–47. For comments, see N. Svoronos, *Recherches sur le cadastre byzantin et la fiscalité aux XIe et XIIe siècles: Le cadastre de Thèbes* (Paris, 1959), 125–26; F. Dölger, *Beiträge zur Geschichte der byzantinischen Finanzverwaltung, besonders des 10. und 11. Jahrhunderts* (Leipzig, 1927), 56; E. Schilbach, *Byzantinische Metrologie* (Munich, 1970), 275–77; Lefort, “Fiscalité,” 320–21; also J. W. Nesbitt, “Mechanisms of Agricultural Production on Estates of the Byzantine Praktika” (University of Wisconsin, Ph.D. diss., 1972), 90ff, and Oikonomides, “Role of the State,” 955, 1011ff. *Apokope* can mean a payment, the determination of the value of land or of a unit of production, payment according to contract for the use of land or pasture land: Sophocles, *Istor. Lex. s.v.*, Dölger, *BZ* 29 (1929–30): 335; Longnon and Topping, *Documents*, 273.

Table 2A
Value and Taxation of Land

	Value (per modios)	Tax (per modios)	Tax as a percentage of value
First-quality land			
11th century	1.00 nomisma	$\frac{1}{24}$ nomisma	4.20
13th century	0.57 hyperpyron	$\frac{1}{48}$ nomisma	3.65
Second-quality land			
11th century	0.50 nomisma	$\frac{1}{48}$ nomisma	4.20
13th century	0.28 hyperpyron	$\frac{1}{100}$ hyperpyron	3.60
Third-quality land			
11th century	0.33 nomisma	$\frac{1}{72}$ nomisma	4.20
13th century	0.14 hyperpyron	?	?
Meadow land (irrigated)			
11th century	3.00 nomismata	$\frac{1}{8}$ nomisma	4.20
13th century	?	$\frac{1}{36}$ hyperpyron ¹	?

Table 2B
Value of *Paroikoi*

	<i>Zeugaratos</i>	<i>Boidatos</i>	<i>Akteimon</i> or <i>pezos</i>
11th century	24 nomismata	12 nomismata	6 nomismata
13th century	60 hyperpyra	40 hyperpyra	20 hyperpyra

Distributed land per category of *paroikos*

11th century			
13th century	40 modioi	30 modioi	20 modioi

Source: Eleventh-century fiscal document: J. Lefort, *Géométries du Fisc byzantin* (Paris, 1991), 62; *Apokope*: Uspenskii, "Vizantiiskie zemlemery."

¹Or: $\frac{1}{30}$, according to E. Schilbach, *Byzantinische Metrologie* (Munich, 1970), 255.

of the document there is an example of a fictitious estate, which serves to illustrate the manner of calculating the taxes due. The domanial land of this estate consists of 897 modioi of arable land; since the example also places on the estate 11.5 *zeugaratoi*, each one of them would cultivate 78 modioi of domanial land, under conditions that are not specified—that is, it is not stated whether this would be by corvée labor or sharecropping, nor, it should be said, is it specifically stated that the domanial land would be cultivated only by these 11.5 *zeugaratoi*. Together with his own land, a *zeugaratos* would thus cultivate a total of 119 modioi.¹⁰⁴ As an exercise, we may take the *zeugaratoi* of Mamitzon. They formed almost half the population of *paroikoi*; if they cultivated half the domanial land, on average they would cultivate 62 modioi of domain land (both by corvée labor and by sharecropping) and a total of 129 modioi, including their own.

How much land a peasant was able to cultivate is different from how much he did cultivate and how much he owned. There are no firm figures as to how much land a *zeugaratos* is capable of cultivating in one year. There are estimates of 83–213 modioi, depending on the quality of the soil.¹⁰⁵ That the peasant holding and the land cultivated by a peasant household are two different things is, of course, self-evident in the many villages of Macedonia, where the households of *paroikoi* are not shown as possessing any arable of their own;¹⁰⁶ but it may become obfuscated in the cases where the *paroikoi* households do possess some land.

If the domanial lands were cultivated by a mixture of corvées and tenant farming, as was certainly the case wherever there were large estates, questions arise as to how much corvée labor there was and what were the terms of renting or sharecropping. We know something about corvée labor. The *praktika* of the fourteenth century give a varying number of days of labor owed by the *paroikoi* to the landlord; they also indicate that the number varied from domain to domain or from area to area. Indeed, the conditions surrounding corvée labor are among the most variable factors of production in all the actual and former Byzantine possessions. In Byzantine Peloponnese in the fifteenth century, the *angareia* was exacted from the *paroikoi* throughout the year. Plethon found it a servile and onerous form of taxation.¹⁰⁷ In Asia Minor, in the thirteenth century, the inhabitants of the village of Bare must also have found it objectionable, for they refused to perform labor services for the monastery of Lembiotissa.¹⁰⁸ According to the Latin *praktikon* of Lampsakos (1219), each *boيداتos* and *zeugaratos* owed 48 days of labor services a year, commuted to a payment of 4 hyperpyra. Those without oxen owed 24 days, probably commuted to 1 hyperpyron.¹⁰⁹ In Macedonia, 12, 24,

¹⁰⁴ In the example given in the document, 11.5 *zeugaratoi* hold 470 modioi, i.e., an average of 41 modioi per *zeugaratos* (Uspenskii, “Vizantiiskie zemlemery,” 2:308).

¹⁰⁵ Schilbach, *Byzantinische Metrologie*, 68–70.

¹⁰⁶ Below, 000.

¹⁰⁷ Lambros, *Παλαιολόγεια καὶ Πελοποννησιακά*, 3:122. On *angareia*, cf. Oikonomides, “Role of the State,” 978–9.

¹⁰⁸ MM 4:255–56.

¹⁰⁹ G. L. Tafel and G. M. Thomas, *Urkunden zur älteren Handels- und Staatsgeschichte der Republik Venedig*, 3 vols. (Vienna, 1856–87), 2:209.

and 52 full days of labor are attested, although the 52 days appears only once.¹¹⁰ In a village not far from Prilep, an area in Serbian hands since the early fourteenth century, two days a week per household are mentioned.¹¹¹ The difference, obviously, is significant in terms of the form of land exploitation. Sometimes the *angareia* was converted into cash. In Frankish Peloponnese, the *servicium personale* was, on some estates, bought off at 5 perperi per household and was thus in the nature of a flat tax.¹¹² In fourteenth-century Macedonia, one also gets the impression that all households owed the same amount of corvée labor, since the documents, generally speaking, do not differentiate according to size, wealth, or labor power of the household, and since the *angareia* appears at the end of the *praktika*, with the rest of the dues generally levied on the *paroikoi*. But a *praktikon* of some lands, near Rentina in Macedonia, in 1420, calculates the cash replacement of the *angareia* as 4 nomismata for the *zeugaratoi*, 3.5 for the *boidatoi*, 3 for those with no animals, and 1 nomisma for the widows. These are large sums of money when one realizes that the base tax of the *zeugaratoi* on that same domain was 4, 5, and 8 nomismata, while that of the *boidatoi* was 4.5, 5, and 6 nomismata.¹¹³ The basis for estimating the two payments was certainly different, but the size of the payment for labor services is impressive.

The details of cultivation with corvée labor escape us: the landlord had his own oxen (sometimes called *doulika zeugaria*),¹¹⁴ but it is also plausible that the peasants cooperated, sharing their oxen, in cultivating the land of the landlord. In Frankish Peloponnese, the *Assizes de Romanie*, the law code of Frankish Greece, stipulated that peasants were allowed to sell all their animals and movable goods, except for one yoke of oxen and a donkey, which they were to save for their own subsistence and their *servicium personale*.¹¹⁵ Obviously, the provisions of this code do not apply to Byzantine lands, but they do point out a reality concerning corvée labor: for the peasant to perform it, he must also have his own subsistence assured by other means, for all of the products of cultivation through corvée labor went to the landlord.¹¹⁶ The value of corvée labor to the landlord is therefore considerable, although it is difficult to estimate its

¹¹⁰ Laiou-Thomadakis, *Peasant Society*, 181; for 52 days, see Lefort, *Actes d'Esphigménou*, ed. J. Lefort, Archives de l'Athos (Paris, 1973), no. 7 (one day per week), with reference to *Actes de Xéropotamou*, ed. J. Bompaire, Archives de l'Athos (Paris, 1964), 151, where there is a general discussion of *angareia* (corvée) from the *praktika*; cf. Ostrogorskij, *Praktika*, 364–65.

¹¹¹ *Actes de Saint-Pantéléémôn*, ed. P. Lemerle, G. Dagron, and S. Čirković (Paris, 1982), 166 (donation of Stephen Dušan to the metropolitan of Serres, of a church near Kozelj (1352–53)).

¹¹² Longnon and Topping, *Documents*, nos. I, II, III, VII, and p. 271; Topping, “Régime agraire,” 270ff.

¹¹³ *Lavra*, 3: no. 165. In the Latin *praktikon* of Lampsakos, the base tax paid by the *zeugaratoi* was almost 10 hyperpyra, and of the *boidatoi* 5 hyperpyra; the commuted *angareia* was 4 hyperpyra.

¹¹⁴ On this meaning of the word, see *Iviron*, 3:75; cf. *Lavra*, 3: no. 161, and *Docheiariou*, p. 275. See also Ostrogorskij, *Féodalité*, 162 n. 1. Of course the organization of large estates in Frankish Peloponnese may have differed in significant respects: see Jacoby, “Les états latins,” 11ff. In the late 13th century, the estate of Theodore Skaranos seems to have been cultivated by his *paroikoi* with his own oxen: see below, 349–51. Lembiotissa had its own oxen as well: MM 4:146ff.

¹¹⁵ Longnon and Topping, *Documents*, 271–72.

¹¹⁶ On this aspect of corvée, see Nesbitt, “Mechanisms of Agricultural Production,” 132.

cash-value in a precapitalist rural economy, as indeed is the case with any nonsalaried labor.¹¹⁷

If our figures for the days of corvée owed by Byzantine *paroikoi* are correct, then the amount of domain land that could be cultivated by corvée labor varied considerably. With 12 days, one may imagine that corvée labor was concentrated in periods of the highest activity, perhaps the harvest. In Mamitzon, 29% of domanial land, a very considerable proportion, was to be cultivated by corvée labor.¹¹⁸ Where the labor services were 52 days per year (only one attested case), and where the cash value of the *angareia* is very high, as in the document from Rentina, we must assume direct exploitation of a large part of the domain. On the basis of the data for the possessions of Lavra, with 24 corvée days per year, and on the understanding that a peasant with two oxen could cultivate 150 modioi, with one ox 100 modioi, and without any oxen 75 modioi, N. Svoronos has estimated that, at the time when the monastery had its greatest labor force, the peasants could cultivate with corvée labor a maximum of 20–24% of domain lands.¹¹⁹ This was, for the landlords, the part of the domain most productive in revenues, and it may be that they reserved the most fertile lands to it, as was explicitly stated in the *praktikon* of Mamitzon. Commercialized agricultural products must have come in part from this section of the domain.¹²⁰

Domain lands could also be cultivated with wage labor. Paid agricultural laborers, called *misthioi*, appear in the sources, although not very frequently. Sometimes they are poor peasants, the *eleutheroi*, a term denoting no freedom other than the fact that they do not yet pay taxes to anyone; for the most part, they own no land and no animals. We find them, for example, on the domains of the monastery of Xenophon, where they eventually become *paroikoi*.¹²¹ We find paid laborers in the Life of St. Germanos. Germanos was the son of a financial official of Thessalonike. His father, described as a rich man, hired paid laborers to work in his vineyards; they worked for wages agreed upon in advance. They were certainly not the man's *paroikoi*, and they seem to have been very poor: St. Germanos thought that their wages were disproportionately low compared to their labor.¹²² The impression one gets is that only the poorest peasants

¹¹⁷ W. Kula, *Teoria economica del sistema feudale: Proposta di un modello* (Einaudi, 1970), chap. 3. He has calculated that because of corvée labor the estates of the Polish middle-level nobility in the 18th century could show a profit of 7% a year over the market value of the property, and a return of 50% on their investments in cash.

¹¹⁸ If one takes into account the entire land of the village, including that owned by the *paroikoi*, the proportion of land under direct exploitation is 15%: cf. Lefort, "Rural Economy," note 15.

¹¹⁹ *Lavra*, 4:165–67. But in 1321, it seems that the monastery of Patmos expected to cultivate a newly granted domain on Lemnos with labor services alone: E. Vranousi, Βυζαντινὰ ἔγγραφα τῆς Μονῆς Πάτμου, 2 vols. (Athens, 1980), 1: no. 43 (1321).

¹²⁰ In 19th-century Russia, commercialized exploitation is said to have been undertaken primarily on a few great domains, cultivated with corvées and eventually with paid labor: J.-C. Asselain, *Histoire économique de la révolution industrielle à la première guerre mondiale* (Paris, 1985), 181.

¹²¹ Ostrogorskij, *Praktika*, 330ff.

¹²² P. Joannou, "Vie de S. Germain l'Hagiorite par son contemporain le patriarche Philothée de Constantinople," *AB* 70 (1952): 59–60. The incident must have taken place in the 1260s; the saint was born in 1252 and entered Mt. Athos at 18: *ibid.*, p. 49.

were day laborers, such as Nicholas Bardas in Thessaly, who, beset by extreme poverty, sold 1 modios of vineyard to buy an ox with which to till the land, “if I can.”¹²³ Peasants without oxen or with a single ox might supplement their income by hiring themselves out as day laborers, either to great landlords or to richer peasants, but it was probably not in their interest. As for the considerable number of *paroikoi* who owned no arable, or very little arable, whether they had oxen or not, they, in all probability, worked on the estate lands both with labor services and as tenant farmers or sharecroppers. A much earlier document from the archives of the monastery of Vatopedi shows the three types of labor available to and used by landlords: *paroikoi*, day laborers (*misthioi*), and tenants, who in this case seem to have been not *paroikoi* but independent peasants.¹²⁴

Labor services and day labor aside, it is assumed that the peasants who worked on the land of others in this period did so under fixed rent agreements or sharecropper tenancy agreements. This, too, must have varied with locality and chronology.¹²⁵ The term *pakton*, meaning a rent which in principle was paid in cash and was independent of the level of annual production, appears in our sources, but it is virtually impossible to estimate how much the average rent was. In the eleventh century, the *pakton* was 1 nomisma per 10 or 12 modioi of first-quality land, and the fisc connected it to the land tax: the *pakton* was supposed to be double the land tax. For the period under discussion there is only one piece of information: in 1295 the rent charged on land that was to be planted with vineyards was 1 hyperpyron per 10 modioi; this may, however, have been land of exceptionally high value.¹²⁶ Nor is there any indication that a strict relationship between the *pakton* and the land tax continued to exist. *Paroikoi* entered into cash rent agreements, as did independent peasants: before 1204 the *paroikoi* of the monastery of Panachrantos had rented its lands, situated near the Maeander River.¹²⁷ For high-yield agricultural activities, such as vegetable gardens, there were ad hoc agreements, probably arrived at by an estimation of the expected revenues of the property.¹²⁸

Plethon says that in the despotate of the Morea peasants paid their rent in cash, which he considers unfair and servile, because it did not take into account the variations of production during good and bad years, a valid criticism of fixed rents in an

¹²³ MM 4:402–4 (1271); cf. *ibid.*, 407–9.

¹²⁴ Arkadiou Vatopedinou, “Ἀγορευτικὰ Ἀνάλεκτα ἐκ τοῦ ἀρχείου τῆς μονῆς Βατοπεδίου,” Γρηγόριος ὁ Παλαμᾶς (1919), 3:209ff (1080) = M. Goudas, EEBΣ 3 (1926): no. 2, pp. 121–22.

¹²⁵ In the Latin-held areas of the Peloponnese, the tax of the *paroikoi* was paid in cash, while payment for lands other than the *stases* were often paid in kind: Topping, “Régime agraire,” 266.

¹²⁶ *Iviron*, 3: no. 67. On rent, cf. Lefort, “Rural Economy,” 295ff.

¹²⁷ MM 4:176–9. The term is *choropaktikos*.

¹²⁸ Sathas, *MB* 4:622–23. The terms in this contract formula are perfectly compatible with the terms found in an actual contract, *Iviron*, 4: no. 97, if one takes into account the special circumstances of the latter: see below, 352–53. The terms ἀμπελόπακτον and ξενοχωρητικὸν ἀμπελόπακτον refer to vineyards rented out and (in the second case) cultivated by peasants other than the landlord’s own *paroikoi*. The term ἀμπελόπακτον has been variously interpreted as the rent of such vineyards (*Actes de Dionysiou*, ed. N. Oikonomides, Archives de l’Athos (Paris, 1968), 45) and as the vineyards themselves (Lefort, *Villages*, 10). The charge of 1 hyperpyron per 8 modioi, associated with ἀμπελόπακτα, is too low to represent a rent; it is probably the tax on these vineyards (*Iviron*, 3:154).

agricultural society.¹²⁹ Indeed, an important part of his proposals for reform in the agrarian economy consisted in changing the rent agreements, so that the peasants would pay a stated share of the produce once a year. Plethon talks of these payments as “tax,” but it is clear, from the rest of his proposals, that he was speaking of a combination of tax and rent. The terms on which the rent was to be paid is expressed, in his text, as a division of the production (the “fruits of the earth”) between labor, those who own the means of production (τοῖς τὰ τέλη παρεχομένοις τοῖς ἔργοις), and those with administrative/military functions, from the emperor to the soldiers (elsewhere identified as the fisc). The fruits of the earth are identified as wheat, wine, olive oil, cotton, and the products of animal husbandry, including milk and wool. The means of production are oxen, vineyards, pasturelands, “and other such things,” and the division must be made after the seed grain has been set aside, and, in the case of the flocks, after the proper replacements (e.g., of dead sheep) have been made. Those agricultural workers who own the means of production would pay only one-third to the fisc. Those peasants who share the means of production (presumably with the landlord) should receive half the production.¹³⁰ No labor services should be extracted. This idealized scheme, when reduced to its essentials, means that peasants who own no oxen, vineyards, and so on, but only their labor, cultivate lands receiving one-third of the production—excluding seed—with the state and the landlords getting two-thirds, while those who own the means of production pay one-third of their production as tax, keeping two-thirds.

The few data we have from the fourteenth and the early fifteenth century suggest that land tenancy and sharecropping arrangements revolve around one-third and one-half of the production for the landlord. The usual term for rent in kind is *morte*, which does not by itself specify the proportions of the harvest that go to proprietor and tenant. The thirteenth- and fourteenth-century sources from Asia Minor and Macedonia also commonly use the term *dekatia*, which, properly speaking, would refer to one-tenth of the gross production, with the seed and all costs of production falling on the tenant.¹³¹ In this period, however, the term has a generalized meaning, similar to that of *morte*, and refers simply to crop-sharing.¹³² Contract formulas from this period give two types of crop-sharing. For arable land, the tenant provides the seed and all the expenses of cultivation, and keeps two-thirds of the crop at the time of threshing; the proprietor receives one-third of the production, and has no expenses except for the land tax, which he pays.¹³³ For high-yield crops, such as wine, the share of the

¹²⁹ Expressed in modern terms, Plethon’s criticism would be that in a fixed-rent contract, the tenant assumes all of the risk involved in production uncertainty.

¹³⁰ Lambros, *Παλαιολογεία καὶ Πελοποννησιακά*, 3:254–56, and cf. 123.

¹³¹ N. Oikonomides, “Terres du fisc et revenu de la terre aux Xe–XIe siècles,” *Hommes et Richesses*, (as above, note 1), 2:332ff, for all these contracts. See also Lefort, “Rural Economy,” 300. On the *dekate*, cf. Laiou-Thomadakis, *Peasant Society*, 216ff.

¹³² Cf. Lefort, “Rural Economy,” 300. The terms *morte* and *dekatia* are used interchangeably in MM 4:420–21.

¹³³ Sathas, *MB*, 4:622; cf. MM 2:509 (1401).

landlord was one-half of the production, again without any expense on his part. The sharing was done after the wine (or perhaps the must) had been extracted, which is another way of saying that the landlord incurred no expenses.¹³⁴

The existence of contract formulas may suggest that similar terms were widespread in the Byzantine possessions. In fact, even in lands no longer Byzantine, similar contracts obtained: in Cyprus, serfs paid to their lord one-third of the crop, while free peasants paid to the landlord a fixed annual payment, evaluated at one-fourth to one-fifth of the crop, presumably based on the average yield.¹³⁵

Paroikoi certainly entered into sharecropping agreements. Among numerous documents, one might cite a Serbian act for the metropolitan of Serres, which says explicitly that the *paroikoi* pay no tithe (δεκάτη) when they cultivate their own patrimonial lands, but do pay it when they cultivate the land of the church. "Tithe" here is equivalent to *morte*, that is, a payment in kind.¹³⁶ There were also peasants and cultivators who were not *paroikoi*, and who entered into sharecropping arrangements. Such were the gardeners subletting from the Argyropouloi in the early fifteenth century or the men renting vineyards from some nuns in Constantinople in 1401.¹³⁷

The terms of sharecropping were not, I think, different for *paroikoi* and for peasants who were not dependent on a landlord. The dependence of the *paroikos* was, on one hand, fiscal: he paid his *telos*, his tax, to the landlord. On the other hand, it was economic up to a point: this was, to some extent, a captive labor force, which was meant to cultivate the lands of the proprietor to whom the *paroikoi* were granted, by labor services or sharecropping agreements or both. Conditions differed depending on the strength of the labor force thus granted and also on the type of land grant. Monasteries with a very small number of *paroikoi* must have sought to rent their lands to other peasants as well. Grants to small and medium-level proprietors, specifically the *pronoia* holders, may have involved a different set of relationships between peasants and landlords than those that obtained with the owners of large lay or ecclesiastical estates. In the case of a *pronoia* holder, the taxes and duties paid by the *paroikoi* form 50–75% of his revenues, while one also has the impression that the *paroikoi* of *pronoia* holders owned more arable land.¹³⁸ That could mean that rent or sharecropping agreements played a correspondingly lesser role in lands held in *pronoia*.

There was considerable variety in the form of exploitation of land, especially arable land. The amount of seignorial land, which does not appear as land in the possession of *paroikoi*, can vary widely. In Mamitzon it was 2,100 modioi, that is, 116% more than

¹³⁴ Sathas, *MB*, 4:620–21; *MM* 2:506–7.

¹³⁵ J. Richard, "Le Casal de Psimolofu et la vie rurale en Chypre au XIV^e siècle," *Mélanges d'archéologie et d'histoire* 59 (1947): 132–33, reprinted in *Les relations entre l'Orient et l'Occident au Moyen Age: Etudes et documents* (London, 1977), art. 4.

¹³⁶ *Pantélémon*, 166 (1352/53).

¹³⁷ Below, 352–53; *MM* 2:506–9.

¹³⁸ N. Oikonomides, "Notes sur un *praktikon* de pronoiaire (juin 1323)," *TM* 5 (1973): 340–44; Laiou-Thomadakis, *Peasant Society*, 60.

that of the *paroikoi*. In the Slavic *praktikon* of Hilandar, it was five times more than the land given to *paroikoi*; in the monastery of Zographou it was ten times more.¹³⁹ In the village of Brasta, the seigneurial land is double that given to the *paroikoi* (see Table 4). The *paroikoi* of most villages and most monasteries possessed very little to no arable; in other domains, both monastic and those of lay *pronoiai*, they did possess land: in the case of the monastery of Esphigmenou, peasants who had a pair of oxen held an average of 50 modioi, and those with one ox held 25 modioi (see Tables 3, 4, and 5). In some cases, for example in Radolibos, in Genna, and in Loroton (Table 5), the peasant households registered in the *praktika* were sufficient to cultivate the domain land, and indeed they may represent an excessive labor force, since the totality of the domain land, when divided, would result in rather small tenures.¹⁴⁰ The peasants of Genna, and their oxen, must have cultivated other lands as well. In other villages, if the *paroikoi* registered were the only ones cultivating domain land, their tenures would have been very large indeed.

Tables 3, 4, and 5 present some information regarding the ownership of arable land, vineyards, and oxen, with particular emphasis on the relation between land ownership and the ownership of oxen. These tables are selective and do not aim to present a total picture, or an average one. Some villages are included because they were very large and may represent the ways of an old, established village (Radolibos); Brasta and Portarea are included because in these villages land was distributed to the *paroikoi*; Leipsochorion and Eunouchou are included because they had, uncharacteristically, a very high proportion of oxen.

The distribution of animal work power, always in Byzantium a measure not only of the wealth of the peasant but also of his productive capacity and therefore of the land that might be allotted to him to cultivate, was highly skewed, as may be seen from Tables 3 and 4. A small number of households had two or more oxen, a number of households had one ox, and many had none. On the domains of Lavra, in some villages (e.g., Gomatou and Selada), ca. 30% of households had oxen, in others the proportion was higher. In its properties in the theme of Thessalonike generally, in 1321, just under 50% of the households had any oxen. In Radolibos, too, just over one-third of the households possessed oxen. Table 5 shows the number of oxen per domain and establishes the ratios of oxen to households and land to oxen. These averages show the workforce available to the domain, always with the exception of any oxen that might belong to the landlord.

The unequal distribution of oxen within the same village, and particularly the fact

¹³⁹ Ostrogorskij, *Praktika*, 297ff. Unfortunately, the conclusions drawn by Ostrogorsky, namely, that this land was much less productive of revenue (for the landlord) than the land given out to *paroikoi* is not tenable, for it is based on the erroneous premise that the 1 hyperpyron per 50 modioi listed as revenues for this land was an economic revenue, whereas in point of fact it was merely a fiscal revenue: i.e., it represented the tax this land would have owed to the fisc, which was being remitted, and therefore it constitutes a revenue not in the sense of income received but rather in the sense of cost not incurred.

¹⁴⁰ Cf. Lefort, "Radolibos," 220.

that the proportion of peasants with a pair of oxen was small, is a significant factor in the organization of production.¹⁴¹ It necessitates cooperation among peasant households, especially between those with a full team and those with only one ox.¹⁴² It may, furthermore, mean that the landlord had his own teams of oxen, to be used by the peasant at the very least for *corvée* labor, that is, for the direct exploitation of part of the domain: an example of this may be found in the middle-sized estate of Theodosios Skaranos.¹⁴³ This must be the case in villages or domains with a very high proportion of land to oxen. In a large number of domains, the proportion of oxen to land is so low that either the tenures of peasants were very large, or not all of the domain land was cultivated, or the monastery had its own oxen. A combination of the three possibilities may be what in fact obtained; this would mean that a *zeugaratos* might well cultivate more than 100 modioi of land, which would not, however, belong to him, but would, in part or wholly, be held under tenancy or sharecropping agreements. In the case of the *paroikoi* of the lay *pronoiaros* Monomachos, the *paroikoi* have considerable land and oxen.¹⁴⁴

The nature of the terrain affected to some extent both the ratio between households/arable land and the possession or non-possession of arable by the *paroikoi*.¹⁴⁵ That is to say, in areas with a highly developed viticulture or, more obviously, in mountainous or infertile land, the *paroikoi* might own vineyards rather than arable. However, the terrain alone does not suffice for a complete explanation of the fact that often the *paroikoi* owned little or no arable, and of what seems to be a prevalence of sharecropping. Surely the conditions under which the peasants cultivated land were a matter of choice, whether that of the landlord or, at some earlier point, that of the fisc; to some extent also the contracts, especially the sharecropping contracts, represent an arrangement between the landlord and the tenant. We must, therefore, examine the interests of both parties. From a short-term viewpoint, the economic interests of the landlords were better served by *corvée* labor and by sharecropping agreements, both of which would give them a higher revenue from their land than would the revenues they collected on land given out to peasants to possess and pay tax on. Cultivation with *corvée* labor would produce the highest revenues. The least beneficial for them is the collection of revenues from land owned by peasants. If a *paroikos* possessed 50 modioi of arable, the landlord's yield from it would be 1 hyperpyron for the base tax, plus supplementary taxes (no more than 0.5 hyperpyron), plus *corvée* labor. If the same 50 modioi

¹⁴¹ Since oxen were taxed, it is unlikely that they would have been consistently underregistered. Some peasants owned horses or buffaloes, which can certainly be used in cultivation; for the sake of simplicity, and because their numbers are too small to make a statistical difference, these are not included in the discussion.

¹⁴² In 1833 Thiers observed that in Greece, destroyed after the War of Independence, only one-fourth of the peasants had a full team of oxen. Most peasants shared oxen to make a full team. D. A. Zografos, *Ἱστορία τῆς Ἑλληνικῆς Γεωργίας*, 1st ed., 3 vols. (Athens, 1924; repr. 1976 [2 vols.]), 3:218.

¹⁴³ Below, 349–51. Cf. MM 4:146–50 (1234): Lembiotissa will cultivate the land with its own *zeugaria* and get the income. Cf. above, note 114.

¹⁴⁴ Ostrogorskij, *Praktika*, 350ff.

¹⁴⁵ This was already observed by Ostrogorskij, *Praktika*, 318.

Table 3
The *Paroikoi* of Lavra, Theme of Thessalonike, 1321
Draft Animals, Land, and Vineyards

Village	Families				Labor power				Land (modioi)	Vineyards (modioi)
	Households	Men	Women	Total	<i>Zeugaria</i>	<i>Boidia</i>	Donkeys	Horses		
<i>Katepanikion of Hierissos</i>										
Hierissos	+15	+28	+28	+56	1	1	5	1	+38	4
Gomatou	104	199	173	372	13	15	38	20	32	121
Selada	162	361	325	686	17	36	69	2	116	132
Gradista	32	74	64	138	3	6	10	—	36	50
Metalin	28	55	64	119	3	8	18	—	229.08	51.33
Arsenikeia	7	ca. 14	10	ca. 24	3	3	1	—	49	2.17
TOTAL	+348	+731	+664	+1,395	40	69	141	23	+500.08	360.5
<i>Katepanikion of Hermeleia</i>										
Kastron	13	18	19	37	1	3	2	—	—	3
<i>Katepanikion of Longos</i>										
Longos	34	50	57	107	—	13	6	—	95.5	10.5
Parthenon	4	11	6	17	—	1	—	—	?	2.5
Psalis	1	5	5	10	1	—	1	—	6	2.5
TOTAL	39	66	68	134	1	14	7	—	+101.5	15.5
<i>Katepanikion of Kalamaria</i>										
Drymosyrta	56	110	98	208	16	11	11	2	—	—
Agridion										
Paschale	10	20	12	32	4.5	—	—	—	—	—
Panagia	29	52	33	85	8.5	15	4	—	—	—
Krya Pegadia	35	66	62	128	20.5	7	7	—	—	—
TOTAL	130	248	205	453	49.5	33	22	2	—	—
Karbaioi	26	48	47	95	10	3	2	1	—	39
Genna	19	45	38	83	9.5	3	5	1	—	32.50
Neochorion	28	55	42	97	17	2	3	—	—	79.60
TOTAL	73	148	127	275	36.5	8	10	2	—	151.1
Loroton	60	133	117	250	41	13	11	4	—	237.66
Pinson	43	76	63	139	16	6	21	—	11	87.08
St. Euphemia	68	127	109	236	32.5	16	25	—	2.33	248.42
Sarantarea-										
Neochorion	41	66	59	125	18.5	1	3	1	—	119
Gournai	29	43	47	90	6	—	6	—	—	28
Agathe	1	3	4	7	1.5	—	—	—	—	5.5
TOTAL	182	315	282	597	74.5	23	55	1	13.33	488
TOTAL FOR KALAMARIA	445	844	731	1,575	201.5	77	98	9	13.33	876.76

continued

Table 3
(continued)

Village	Families				Labor power				Land (modioi)	Vineyards (modioi)
	Households	Men	Women	Total	<i>Zeugaria</i>	<i>Boidia</i>	Donkeys	Horses		
<i>Katepanikion of Kassandreia</i>										
Skelochorion	17	31	35	66	5	3	4	1	200.25	19.66
Ptelaia	18	32	29	61	2	3	7	—	32.84	13.17
TOTAL	35	63	64	127	7	6	11	1	233.08	32.83
TOTAL FOR										
THESSALONIKE	+880	+1,722	+1,546	+3,268	250.5	169	259	33	+848	+1,288.6

Source: N. Svoronos, "Le domaine de Lavra sous les Paléologues," in *Actes de Lavra*, ed. P. Lemerle et al. (Paris, 1982), 4: 173c–f.

Note: Approximately 28% of the households have a yoke of oxen; approximately 19% of the households have one ox; approximately 53% of the households have no oxen. Ratio of oxen to households: 0.76:1

Table 4
Ownership of Oxen in Selected Villages of Macedonia

	Number of households	2 pairs oxen	1.5 pairs oxen	1 pair oxen	1 ox	Total oxen	Land of <i>paroikoi</i> (modioi)	Domanial land (modioi)	Ratio: oxen/ household	Ratio:
										total arable land/ox (modioi)
Brasta (1318) ¹	47			6	15	27	1,350	3,000	0.57	161
Radolibos (1316) ²	255	4		26	56	124			0.49	
Leipsochorion/ Eunouchou ³	32	5	3	13	7	62			1.94	

¹*Actes d'Esphigmenou*, ed. J. Lefort (Paris, 1973), table I and no. 14.

²*Actes d'Iviron*, ed. J. Lefort, N. Oikonomides, and D. Papachryssanthou (Paris, 1985–95), 3: no. 74.

³*Actes de Chilandar*, ed. L. Petit, *VizVrem* 17 (1911), no. 38.

Table 5
Oxen, Land, and Vineyards in Villages of the Chalkidike

Village	Households	Oxen	Buffaloes	Vineyards of <i>paroikoi</i> (modioi)	Arable land of <i>paroikoi</i> (modioi)	Domanial land (modioi)	Domanial vineyards (modioi)	Oxen/ household	Total land/ox (modioi)
Epano Antigonia (1320)	7	5		19.5	50	500	5.5	0.7	100
Kato Bolbos (1320)	21	10		?		6,450	4	0.5	645
Kato Bolbos (1341)	24	38		?		6,450	12	1.6	170
Drymosyrta (1321)	56	43		68.9		8,000		0.77	186
Genna (1321)	19	22		32.5		445.5		1.15	20
Gournai (1321)	29	12		28		1,400	51	0.4	117
Karbaioi (1321)	26	23		39.3		2,300 (all cultivated)		0.9	100
Kyra Pegadia (1321)	35	48	6	57.3		4,000 (all cultivated)		1.37	83
Loroton (1321)	60	75	24	238.5		1,900	66	1.25	25
Neochorion (1321)	28	36		78.4		1,850	21	1.3	51
Panagia (1321)	29	32		25		1,010		1.1	31.5
Pinson (1321)	43	39		87.5		6,000	18.6	0.9	154
Portarea (1318)	29	22		44.8	1,017	2,100	12	0.75	142
St. Barbara (1320)	4	5		14.5		900	26	1.25	180
St. Euphemia (1321)	68	83		246.1		4,000		1.2	48
St. Mamas (1335)	16	16		18	50	1,000	?	1	62.5
Sarantarea (1321)	41	36	2	118.9		14,500	40	0.88	402
Stomion (1320)	17	2		3		2,410	9	0.12	1,205
Stomion (1338)	19	9		10.5		2,422	26	0.47	269

Source: J. Lefort, *Villages de Macédoine*, vol. 1, *La Chalcidique occidentale* (Paris, 1982).

were cultivated on sharecropping terms, with the landlord getting one-third of the gross product, that share would be 4 hyperpyra. In the short and medium term, then, this was more profitable to the landlord, although not necessarily in the long term; for it has been estimated that the richer peasant households tended to have much greater stability over time than the poor ones, which means greater stability of the labor force.¹⁴⁶ Furthermore, tradition itself argued for the distribution of land to peasants according to their labor power: in 1249 an imperial order to Constantine Laskaris, *doux* of the theme of Thrakesion, in Asia Minor, commanded him to make a census of the village of Mela, registering the *paroikoi*, and give the appropriate land to them according to the animal power they possessed, so that they would pay the appropriate tax.¹⁴⁷ This is very much in the spirit of the *Apokope* and undoubtedly was the case when the *paroikoi* belonged to the fisc, which collected taxes from them.

From the point of view of the peasant, it would be in his economic interest to own land rather than rent it in a sharecropping arrangement. However, the difference might be counterbalanced by noneconomic factors, such as the protection afforded by the landlord.¹⁴⁸ Cultivating the landlord's land by corvée labor would be the arrangement least beneficial to the tenant.

Given the above, one may assume that the considerable differentiation we find in the possession of arable was due to a number of factors. Peasants might own arable land due to the fact that *pronoia* grants were grants of a productive labor force with its lands or to the possibility that in some villages, such as those belonging to Esphigmenou, the monastery inherited a situation or was far-sighted enough to create a situation in which its peasants possessed arable, while other monasteries did not take the same view. It might also be due to the possibility that in some areas peasants might have had a better bargaining power than in others. When landlords did not distribute land to peasants, they may simply have been following their short- and medium-term, but evident, economic interests, since domanial land, cultivated on a sharecropping basis or with labor services, gave them greater revenues. Sharecropping, in the end, may be the form of tenure that best suited the *combined* interests of landlord and tenant.

While older economic theory considered sharecropping inefficient primarily on the basis that it discourages investment on the part of both tenant farmer and landlord, more recent studies have pointed out that, if the interests of both landlord and tenant are considered, sharecropping is, indeed, Pareto-efficient, and that its distinctive feature is the continuing incentive on both sides to maximize the efficiency of agricultural production.¹⁴⁹ The risk-sharing aspect of sharecropping is also very important.¹⁵⁰ In

¹⁴⁶ Laiou-Thomadakis, *Peasant Society*, chap. 6.

¹⁴⁷ MM 4:182–83.

¹⁴⁸ Lefort, "Rural Economy," 231–32. N. Oikonomides, *Fiscalité et exemption fiscale à Byzance (IXe–XIe s.)* (Athens, 1996), 113–14.

¹⁴⁹ J. D. Reid, Jr., "Sharecropping and Agricultural Uncertainty," *Economic Development and Cultural Change* 24 (1976): 549–76, esp. 574–76. Pareto efficiency defines a distribution from which two parties cannot depart without worsening the position of at least one of the two.

¹⁵⁰ J. E. Stiglitz, "Incentives and Risk Sharing in Sharecropping," *Review of Economic Studies* 41 (1974): 219–55, esp. 251.

real and historical terms, of course, much depends on the terms and length of tenure and the kind of supervision the landlord exercises, that is, whether he defines the terms of cultivation, contributes managerial expertise, and so on. In specific historical circumstances, much also depends on the availability of other forms of cultivation, for example, cultivation with wage labor¹⁵¹ or with *corvée* labor; all of these factors, and others, such as technological development, would affect the negotiating position of the landlord and the tenant. Compared to tenancy with a fixed rent, sharecropping certainly is a more efficient arrangement.

Sharecropping in itself, then, does not mean that the productivity of the agricultural economy in Byzantium was adversely affected, since, especially in long-term contracts, investment is certainly not precluded. If, from the point of view of the tenant, it was a worse arrangement than ownership of land, and if from the viewpoint of the landlord it gave him less revenue than *corvée* labor, it may well be that, when the interests of both are taken into account, the arrangement produced a workable equilibrium. It should also be noted that the terms of agricultural contracts, which, as we have seen, suggest that the landlord did not contribute to the expenses (he did not provide the seed, although he may, in many cases, have contributed part of the animal force), reflect conditions that are more beneficial to the tenant than an arrangement by which the landlord shares the expenses and gets a larger proportion of the crop.¹⁵²

Revenues and Investments

The Revenues of the Peasant

The peasant household, whether that of a *paroikos* or of an independent peasant, was firmly embedded in the polyculture typical of the Byzantine agrarian economy that, indeed, is normal in preindustrial peasant societies. A peasant household in Macedonia would have perhaps some fields, but most often these would be rented from a landlord; most often, it would own a piece of vineyard, a garden, and, variously, beehives, some fruit trees, or a boat for fishing if the village was near the water; a number of households would have an ox, and the richer households might possess a pair of oxen, a cow, sometimes a horse, sheep, and goats. Polyculture both reflects the need for self-sufficiency and to some degree fulfills it. A peasant household might wish, as an ideal, self-sufficiency in staple crops. Those with one ox might be barely able to achieve it, in good times; everything depended on how much land the peasant was able to cultivate, and how able he was to rent another ox or get one from the landlord. Those with a yoke of oxen, renting 80 or more modioi of land, might well go beyond self-sufficiency and have a small surplus.¹⁵³ This estimate assumes a crop yield of 1:4 for

¹⁵¹ See P. K. Bardhan and T. N. Srinivasan, "Cropsharing Tenancy in Agriculture: A Theoretical and Empirical Analysis," *American Economic Review* 61 (1971): 48–64.

¹⁵² *Ibid.*, 61. The economic literature on sharecropping is extensive. Among other works, I note S. N. S. Cheung, *The Theory of Share Tenancy* (Chicago-London, 1969), and D. G. Johnson, "Resource Allocation under Share Contracts," *Journal of Political Economy* 58 (1950): 111–23.

¹⁵³ Lefort, "Rural Economy," 294ff. Other estimates put the level of self-sufficiency in cereals for a peasant family of four with one ox at 25 modioi of land (2.5 ha) or at 50 modioi: Lefort, "Radolibos,"

land of second quality and 1:5.6 for land of first quality. The yield ratio is plausible for Thrace, Macedonia, Thessaly, Bithynia, and the Maeander valley, but not for the poorer parts of the empire. If the peasants rented land exceeding 80 modioi, they would be realizing a true surplus from cereal cultivation. The peasant with a full team of animals, then, could have a surplus, but there were not many of those. Self-sufficiency in cereals was thus an ideal rather than a reality for the majority of peasants. Those with no oxen at all, a significant number, would have a hard time of it, and here the other important aspect of polyculture plays an important role.

While few peasants owned land, many owned vineyards. They were an important and valuable source of wealth; they were bought, sold, and given as dowry. The distribution of vineyards was relatively equitable: more than three-quarters of the households of *paroikoi* owned vineyards. This suggests that wine (and raisins) was produced primarily for household consumption, with the surplus destined for the market. Individually, most plots were small, but peasants with vineyards of 20 modioi or so are also attested.¹⁵⁴ Those at the upper end of the scale had most of the opportunity and most of the surplus to send or take to market. While the general population of *paroikoi* rarely had enough grain to market (except perhaps for the payment of their tax), both vineyards and flocks of animals could produce marketable surplus. Peasants in Asia Minor and the Peloponnese also owned olive trees. Flax and cotton were cash crops, as was silk in the Peloponnese. Occasionally, a peasant household might own a mill, whose revenues were not inconsiderable.¹⁵⁵

Peasants also owned sheep and goats, in numbers that varied widely among individual households. Indeed, in Macedonia this is the steepest differentiating factor in measuring the wealth of peasant households. In the village of Gomatou, in 1300–1301, the largest flock consisted of 300 animals, and four households owned 770 (i.e., 65%) of the 1,193 sheep in the village; the great majority of households are not registered as owning any sheep or goats, although it is likely that the tax registers did not record the animals when the number was very small.¹⁵⁶ The great variance in the number of sheep and goats owned by peasant households, as well as the existence of some large flocks, suggests very strongly that this was an activity whose products were commercialized.¹⁵⁷

The diversity in primary production is also characteristic of the activity of individual villages and peasant households: polyactivity, as has already been suggested, was an important characteristic of the agrarian economy. A number of products were both for auto-consumption and for the market, whether they were marketed by landlords or peasants: grain, wine (an important cash crop), legumes, vegetables, fruit. The very unequal distribution of flocks among peasant households, and the existence of some

222; Kondov, “Über den wahrscheinlichen Weizenertag,” 97–109. These estimates assume a yield of 1:5.

¹⁵⁴ On the distribution of vineyards, see *Lavra*, 4:173a–f, and Laiou-Thomadakis, *Peasant Society*, 176ff.

¹⁵⁵ See below, pp. 353–54; for silk, see Hodgetts, “Venetian Officials.”

¹⁵⁶ Laiou-Thomadakis, *Peasant Society*, 173–74.

¹⁵⁷ Laiou, “The Economy of Byzantine Macedonia.”

large flocks, also suggest the commercialization of the products of animal husbandry by some peasants as well as by landlords. Wool is particularly important because it enters the secondary sector of production. The wool collected from flocks owned by peasants may have been sold to large landowners, for example monasteries, which had their own cloth manufacturing. Both landlords and peasants must have sold it, as wool and yarn, to the cities: Thessalonike and Serres manufactured some woolen cloth. There were also small cottage industries of woolen cloth. In the late thirteenth century, Patriarch Gregory of Cyprus ordered a hat in Thessalonike and a rough woolen cloak that was to be woven in the countryside, in a village inhabited by “men who wear cloaks and make them,” that is, a place that specialized in the production of such garments.¹⁵⁸ Thus the agricultural economy also involved the treatment of its products in the countryside as well as their sale in the cities.

The artisanal activity of the peasantry extended beyond the manufacturing of woolen cloth. Studies of the names of peasants in Macedonia in the first decades of the fourteenth century have revealed the existence, in the larger villages, of blacksmiths, potters, shoemakers, hatters, and tailors. In Radolibos, J. Lefort proposes the existence of family workshops of shoemakers and potters. Although the households of most village craftsmen were also engaged in agricultural activities, the degree of occupational differentiation was higher than it had been in the eleventh or twelfth centuries. Craft specialization may indicate some prosperity, as well as a high level of exchange within the village. As the letters of Gregory of Cyprus suggest, sometimes the products of village craftsmanship were marketed outside the village as well.¹⁵⁹

With polyculture and polyactivity, self-sufficiency in cereals is not essential, for there are other products that can be exchanged for cereals, either through the market or through barter and other informal arrangements. A number of peasant households, a minority, as has been suggested, were beyond self-sufficiency in cereals; the rest survived by adopting flexible arrangements that optimized the use of their labor and the use of available animals. The survival of peasant households owed a good deal to the existence of polyculture and polyactivity. Given this fact, I have not made an effort to estimate the revenues of a peasant household.

The Revenues of the Large Estate

Large estates, especially monastic ones, were formed anew after the debacle of 1204 in Asia Minor and after the reconquest of Constantinople in Macedonia and Thessaly. In both cases, it would seem that the result had been that large proprietors had lost either their lands or their peasants, who refused to pay dues to them, or both. The restoration of Byzantine political power led, in both cases, to donations of land to

¹⁵⁸ S. Eustratiades, “Γρηγορίου τοῦ Κυπρίου Ἐπιστολαί,” Ἐκκλησιαστικός Φάρος 2 (1909): letters 82 and 87; cf. Laiou, “The Economy of Byzantine Macedonia.”

¹⁵⁹ J. Lefort, Séminaire de l’Ecole Pratique des Hautes Etudes, “Anthroponymie,” 236–38; idem, “Rural Economy,” 302–3; Laiou-Thomadakis, *Peasant Society*, 124–27. On trading activity by peasants, see Matschke, “Commerce,” 786–87.

monasteries and, certainly after the reconquest of the Balkan provinces, to the donation of large estates to aristocrats, some of whom acquired very great fortunes. It took time to rebuild some fortunes: by 1328 the monastery of Iveron had just managed to acquire lands equal to those it had had in the early twelfth century.¹⁶⁰

The large estate comprised a variety of sources of revenues. For one thing, in this period, ecclesiastical estates, the estates of *pronoia* holders, even the estates of middle-level but privileged proprietors like Theodosios Skaranos, had fiscal revenues composed of two parts. One was actual revenues, consisting of the taxes and other dues, often in kind, of the *paroikoi*. The second type of fiscal revenue was the exemption from taxes, either supplementary taxes such as *epiteleia*, *choiroprovaton*, *choirodekastia*, and *melissoennomion*, and other state taxes, or the base land tax, all of which the proprietor would ordinarily have had to pay.¹⁶¹ The annual fiscal revenues of the monastery of Iveron in the year 1320 is estimated at 1,250 gold coins, that of Esphigmenou at 500 gold coins, and that of Lavra, the largest and richest of the monasteries of Mount Athos, at 4,000 gold coins. Of these, the actual revenues (as opposed to tax exemption), that is, the taxes of the *paroikoi*, were 459 hyperpyra for Iveron, 180 for Esphigmenou, and 1,050 for Lavra.¹⁶² I would rather not count the tax exemptions as revenues, but as expenses not incurred in the balance sheet of the domains.

The economic revenues of the great landlords are much more complex to estimate. They consisted of the revenues of the lands rented out to tenants or sharecroppers, the dues in kind of the *paroikoi*, the rent paid by peasants who were not *paroikoi* of the landlord,¹⁶³ rents on urban real estate, and the revenues from land cultivated by corvée labor. Given the numerous parameters and a number of imponderables (e.g., was all the land that was cultivable in fact cultivated?), it is very difficult to estimate the economic revenues of the landlord. In the case of Lavra, it is perhaps possible to estimate the revenues of the *arable land*, in the theme of Thessalonike, in 1321. Lavra had, at that time, 54,000 modioi of arable land in the theme of Thessalonike. If five-eighths of this land was cultivated each year, and if the average yield was 1:4.8,¹⁶⁴ the gross production of grain would be 162,000 modioi, of which 33,750 modioi would go for seed. If the proprietor received one-third of the gross production, his share would be 54,000 modioi of grain (the share of the tenants, after next year's seed has been extracted would be 74,250 modioi). At an average price of 0.09 or 0.08 nomisma per modios of grain, the revenues of the monastery would be between 4,860 and 4,320 nomismata, or 15–13% of the value of the land ($54,000 \times 0.61 = 32,940$ nomismata).¹⁶⁵

¹⁶⁰ *Iviron*, 3:19.

¹⁶¹ *Iviron*, 3:25ff.

¹⁶² The fiscal revenues of Hilandar in 1300 were 580 hyperpyra and of Zographou in 1320 were 138 hyperpyra: *Esphigménou*, p. 22.

¹⁶³ See *Iviron*, 3: no. 70 (1301), line 316: 64 modioi of land in Kato Bolbos are rented by the monastery to *xenoparoikoi*; cf. *ibid.*, lines 387–88.

¹⁶⁴ See Lefort, "Rural Economy," 295.

¹⁶⁵ The figures differ from those of Svoronos, "Lavra," 4:170–71, because of different assumptions regarding crop yield, the payments of the *paroikoi* and the proportion of cultivated and fallow land in the two-year rotation.

In reality, it would be much higher because the monastery would not have had to share the production coming from *corvée* labor.

This amount is already much higher than the dues of the *paroikoi*. Is it realistic? That is, was the labor force of Lavra capable of leasing this land and putting it under cultivation? It would seem that it was, for there were 880 households, with 250.5 *zeugaria* and 169 *boidia*—that is, 61 modioi of land per household and 80 modioi per ox. This is certainly a high ratio of land to oxen. In Greece, in 1875, the proportion of oxen to families was 0.73, that of oxen to land was one pair of oxen to 44 *stremmata* of arable (a *stremma* is more or less equivalent to a modios), certainly very different from the ratio in fourteenth-century Macedonia.¹⁶⁶ The peasants of Lavra who owned a full team would be cultivating land much in excess of 80 modioi, and the monastery also had its own teams of oxen for the use of its *paroikoi*. The revenues mentioned above should be taken only as an order of magnitude, and it should also be noted that expenses—for example, the cost of the oxen—have not been taken into account.

The resources of the large estate, apart from the labor force, consisted, first of all, of land. The monastery of Lavra was one of the greatest proprietors, although the properties of the Kantakouzenoi, on which we do not have detailed information, may have been as large or larger before the great civil war. In 1321 Lavra had approximately 185,000 modioi (18,500 ha) in the theme of Thessalonike, the theme of Strymon, and the island of Lemnos. Much of this land came from imperial donations; some was bought by the monastery. It was the same with other monasteries, which also profited from the donations of individuals.¹⁶⁷ Sales or donations could involve the tiny plots of peasants or large and functioning estates. The composition of the large estate and the process of its creation is the same whether we are in Asia Minor, Thessaly, or Macedonia. In 1234 the emperor donated to Lembiotissa an imperial *zeugelateion* near Palatia: it had 5 *zeugaria* of cultivated land, and one *zeugarion* of pasture land.¹⁶⁸ A large estate would include arable land, pasture and meadow lands, vineyards, olive trees in Asia Minor and the Peloponnese, fruit trees elsewhere, threshing fields, gardens, mills, fishing boats, beehives, flocks, and urban real estate.¹⁶⁹ Large landlords also had the necessary equipment for the processing of agricultural products, for example, mills,

¹⁶⁶ A. Mansolas, *Ἀπογραφικὰ πληροφοροῖα περὶ γεωργίας κατὰ τὸ ἔτος 1875* (Athens, 1876), 39, 41. My own calculations from his data show one pair of oxen to 54 *stremmata* of land. I thank S. Petmezas for this reference.

¹⁶⁷ See, for example, *Iviron*, 3:61 (1273), 72 (1310): the monastery buys arable land of 1,000 modioi from the *sebastos* Ioannes Amaseianos and receives a donation of 1,000 modioi from Andronikos II, taken from the lands of the lay proprietor Theodore Masgidas.

¹⁶⁸ See MM 4:146–50. The *zeugarion* here is a unit of measurement, denoting the amount of land that one can cultivate with one pair of oxen in one year. On Lavra, see *Lavra*, 4:170; the archives of the monastery of Lembiotissa in Asia Minor, of Xeropotamou, and of Hilandar contain numerous acts of sale and donation by individuals. Sometimes the land purchases were important in quantity: before 1338, the monastery of Xenophon had bought 3,550 modioi of land from the heirs of the *sebastos* Sgouropoulos: *Actes de Xénophon*, ed. D. Papachryssanthou, Archives de l'Athos (Paris, 1986), no. 25.

¹⁶⁹ Among the many possible examples, see *Iviron*, 3: no. 58; MM 4:18–22; Zakythinou, *Despotat*, 2:187.

and presses for olives and wine,¹⁷⁰ both in the countryside and in cities such as Thessalonike, a sure sign of the commercialization of production. According to a chrysobull of Michael VIII, the estates of Nea Mone on Chios included, along with arable land, pastures, vineyards and olive trees, buildings, two bathhouses, warehouses near the sea (another sure sign of commercialization), and boats.¹⁷¹

Monastic landlords exhibited considerable rationality in the way they enlarged their possessions. They acquired pasture land to diversify their production and complement their possession of arable. This was the case of Lavra, which, between 1300 and 1321, added to its considerable arable lands pasture lands and a large number (632 modioi) of vineyards.¹⁷² The monastery bought or otherwise acquired pieces of land contiguous to its existing possessions. Thus, for example, the monastery of Iveron bought, in 1273, 1,000 modioi of arable land close to its domain of Radolibos and made other purchases in the area as well.¹⁷³ An imperial donation of land in Malouka led to quarrels between the monasteries of Iveron and Hilandar, so the emperor proceeded to an exchange, whereby Hilandar received the 1,000 modioi that had originally been granted to Iveron, but the latter monastery got another 1,000 modioi, close to the land it had bought in 1273.¹⁷⁴ This rounding out of properties had a double function, juridical and economic: it protected the domains and enabled the landlords to expand further, through the application of the law on *protimesis*,¹⁷⁵ while it also made it easier and more profitable to exploit lands that were geographically close, that is, it created a more integrated domain. The interplay between the law of *protimesis* and the acquisition of contiguous parcels by monasteries continues through the late fourteenth century in Macedonia.¹⁷⁶

Urban real estate was important to great landlords, if the examples of monasteries, on the one hand, and John Kantakouzenos, on the other, are typical. The city of Serres was at the center of a fertile area, with production of grain and wine and with cattle, other animals, and fishing. Both lay and ecclesiastical proprietors had properties here, including buildings, bakeries, and shops, some of which were rented out.¹⁷⁷ The monastery of St. John Prodromos was the most important monastic proprietor in Serres, where it owned, among other things, seven mills, shops, and a bakery.¹⁷⁸ But other monasteries had possessions there, such as the monastery of Philotheou, which, in 1346, had two water mills, vineyards, and arable land along the river close to Serres and buildings in the city.¹⁷⁹ The monastery of Pantokrator acquired, through a donation made by a member of the lower aristocracy, three workshops in the *emporion* of

¹⁷⁰ See, for example, *Iviron*, 3: no. 84.

¹⁷¹ See, for example, *Iviron*, 3: nos. 76 (1320), 84 (1326). For Nea Mone, see MM 5:10–13.

¹⁷² Svoronos, "Le domaine de Lavra," 170.

¹⁷³ *Iviron*, 3: no. 61, and Introduction, p. 15.

¹⁷⁴ *Iviron*, 3: no. 72, and *Chilandar*, nos. 41 and 37, and introduction to *Iviron*, 3:18.

¹⁷⁵ See E. Papagianni, "Protimesis (Preemption) in Byzantium," *EHB*.

¹⁷⁶ See, for example, *Chilandar*, no. 192 (1392), and *Esphigménou*, nos. 30 (1393), and 29 (1388).

¹⁷⁷ *Kutlumus*, no. 18 (1338); donation of Theodora Kantakouzene.

¹⁷⁸ *St. Jean Prodrome*, nos. 4, 25.

¹⁷⁹ *Philothée*, no. 9.

Serres and two bakeries in the *kastron*.¹⁸⁰ The large number of water mills in the city suggests that there was processing of grain, while it is also probable that there was production of woolen cloth.¹⁸¹ We do not know with certainty whether the great proprietors, in addition to renting out their workshops, also processed their production here, but it is not unlikely. Great proprietors also had real estate in the city of Thessalonike, including houses and workshops that they rented out. The metropolitan church, for example, in the early fifteenth century, possessed perfume shops in Thessalonike, which it rented out.¹⁸² The monastery of Xenophon had five grocery stores and three large houses, which, in 1419, had been turned, by the tenant, into a huge and prosperous wine shop.¹⁸³ The monastery of Iveron made a deliberate effort to acquire real estate here, buying, among other things, winepresses, gardens, and bakeries (between 1314 and 1326).¹⁸⁴ The importance of the presence of great proprietors in the cities is treated elsewhere,¹⁸⁵ the only point of interest for us here being the suggestion that the cities played a role in the economic integration of the large estate.

A global view of the large estate in this period suggests that a successful enterprise would have both a complementary agricultural economy and a considerable involvement in the processing of agricultural products. The large estates of Macedonia produced grain, wine, and the products of animal husbandry. Estate owners could press their wine in their own winepresses, thresh the grain in their own threshing grounds or those of their *paroikoi*, and mill their corn in their mills or those of their *paroikoi*. They also, however, collected rents: not only from the arable land leased to their *paroikoi*, but also from urban real estate. The major constraint on the economic activities of large landed proprietors was the availability of labor, which some of them had in sufficiency, but others did not. The large proprietors were wealthy, but not very numerous, even in the first half of the fourteenth century. There were also the proprietors with properties of medium size, whether they held them on privileged terms or not. Such properties seem to have prospered in areas in or near cities. They will be discussed in connection with investments.

Investments and Land Improvement

Two aspects are important here: one, of considerable significance for any agrarian economy, is the question of land improvements and cultivation of uncultivated lands;

¹⁸⁰ *Kulturnus*, no. 8. Vatopedi also had possessions in the *emporion* of Serres: W. Regel, *Χρυσόβουλλα καὶ γράμματα τῆς ἐν τῷ Ἁγίῳ Ὁρει ἱεράς καὶ σεβασμίας μεγίστης μονῆς τοῦ Βατοπεδίου* (St. Petersburg, 1898), no. IV (1329), pp. 16–17. Cf. K.-P. Matschke, “The Late Byzantine Urban Economy, Thirteenth–Fifteenth Centuries,” *EHB* 465.

¹⁸¹ See A. Laiou, “Κοινωνικές δυνάμεις στὶς Σέρρες στὸ 14ο αἰώνα,” in *Οἱ Σέρρες καὶ ἡ περτοχὴ τους ἀπὸ τὴν ἀρχαία στὴ μεταβυζαντινὴ κοινωνία* (Serres, 1998), 203–19, and Matschke, “Urban Economy.”

¹⁸² S. Kugéas, “Notizbuch eines Beamten der Metropolis in Thessalonike aus dem Anfang des XV. Jahrhunderts,” *BZ* 23 (1914/19): 148.

¹⁸³ *Xénophon*, no. 32.

¹⁸⁴ *Iviron*, 3:18–19.

¹⁸⁵ Matschke, “Urban Economy,” 457.

the second is the question of what were the crops or agricultural activities in which various categories of people invested. In the earlier part of the period, down to the middle of the fourteenth century, there were investments in the planting of vineyards, vegetable gardens, fruit trees, and perhaps olive trees, the restoration of some arable to production, the establishment of fisheries, and the erection of water mills.¹⁸⁶

All these activities constituted what the Byzantines called βελτίωσις, improvements that increased the productive capacity of the land, or, more generally, the revenues of a holding, which was, after all, what most interested the fisc, where the term probably originated. The term βελτίωσις did not apply only to land improvement but also, as I have indicated, to the erection of a mill, or even the restoration of urban properties and the restoration, in some cases, of small churches¹⁸⁷—the main point being that restoration made the restored property productive. In the period we are examining, a number of official, imperial donations of land to the church or to individuals includes permission to make “improvements” on the land, meaning, as far as the fisc was concerned, that the increased revenues would not be claimed or taxed by the donor.¹⁸⁸

There were a number of possible investors in such “improvements”: the landlord (lay, ecclesiastical, the state), the peasant who may have owned the plot of land on which improvements were made, or the peasant who made improvements on lands he did not own; and others, whose primary occupation may have been trade, for example, but who also invested in land. Given the structure of the Byzantine countryside, where the large exploitation coexisted with family plots and with plots of medium size, it is important to see what each category could and did invest in and in what form.

Cereal Cultivation It may be taken as given that land for cereal cultivation was always an important asset and that there was investment in the sense of acquisition of arable land. When it comes to investment that increases productivity or production, the melioration of arable was the most expensive investment in terms of capital. Apart from the original investment in land, one needed oxen, or other draft animals, and plows, as well as labor. The melioration of arable seems to have needed three years to come into effect. At least, this is indicated by the chrysobull of John VII, which gives to the monks of Dionysiou the abandoned *palaiochorion* of Mariskin with the promise of bringing into production, within three years, a surface of two *zeugaria*.¹⁸⁹ Other kinds of melioration, for example, planting vineyards, would have taken longer to bear fruit:

¹⁸⁶ Cf., on trees, *Chilandar*, no. 19. On olive trees and the *vivarion*, MM 4:1–4 (1228). On gardens, *Chilandar*, no. 82 (1322). This is an agreement for the joint exploitation of a domain by two beneficiaries; it is stated that, if any improvements are made and the income is increased, the terms of the agreement will not be altered.

¹⁸⁷ *Iviron*, 3: no. 60 (1264), line 19: βεβελτιωμένη καὶ συνισταμένη.

¹⁸⁸ See, e.g., *Chilandar*, no. 132 (1343), to Manuel Mesopotamites; *Lavra*, 2: nos. 80, 82. The examples can easily be multiplied.

¹⁸⁹ *Dionysiou*, no. 10 (1408); cf. *Xéropotamou*, no. 28 (1407). In the donation to Dionysiou, the emperor promises to give them the two *zeugaria* (of land) with all their equipment, but the monks would have to find and establish their own *paroikoi*. Cf. *Dionysiou*, no. 13. For the three-year interval, cf. Constantine Porphyrogenitus, *De cerimoniis aulae byzantinae*, ed. J. J. Reiske, 2 vols. (Bonn, 1829–30), 695.

four years are mentioned in a document, but it probably took five to seven years.¹⁹⁰ Obviously, also, different kinds of land could be so planted: vineyards need good-quality land, whereas olive trees can grow on relatively poor soil. Placing uncultivated land under cereal cultivation seems to have been an enterprise that required some organization and probably was done more easily by relatively large units such as a monastery or the state, as we have seen in the case of John III Vatatzes.¹⁹¹ Some of the occasional references we have to such investments are connected with disputed rights, that is, with the cultivation of lands that belonged to other proprietors. In such cases, we often find the monastery, or lay landlords, providing the managerial organizational expertise, while their *paroikoi* provided the labor. In one case, it is said that the inhabitants of an entire village got together and sowed in one day a piece of land that belonged to the monastery of Lembiotissa, presumably so as to establish rights over the land.¹⁹² The extent and frequency of such investment varied with time and place. In the period of expansion, that is, still, in some areas, in the thirteenth century, the investment may have been significant. One also, however, has to keep in mind that the expansion of the cultivated land of large estates, for example monasteries, in the course of the thirteenth and the early fourteenth century, went hand in hand with the installation or acquisition of peasant households, which provided both the manpower and, to a large extent, the equipment, in terms of oxen and probably plows. It also often included domains that were in working order.

The size of estates played an important role in the possibility of and returns from investment in cereals. The Kantakouzenoi owned vast properties in Macedonia, especially in the rich Strymon valley. According to the undoubtedly exaggerated but nonetheless not implausible account of the emperor himself, his property included, among its liquid and movable assets, large numbers of oxen and other draft animals.¹⁹³ He lists 1,000 pairs of oxen, which were used in farming his estates. There were 50,000 pigs, producing, one might imagine, vast quantities of lard and meat, not to mention the bristles that were used by painters and those who decorated rich houses with frescoes;¹⁹⁴ there were also 70,000 sheep, again with a prodigious production of wool. There was, he says, an “incredible” quantity of crops, hard to estimate. There were 300 mules, 500 donkeys, and 200 camels. He lists 2,500 mares, which may have been used for breeding draft horses. As for the money he and his mother lost, in Constantinople and other cities, neither he nor anyone else could tell how much it was, which means that it was so much that, again, it could not be estimated.¹⁹⁵ The large number

¹⁹⁰ A document of 1424, in which the monastery of Docheiariou gives uncultivated land to Dionysiou (which disposes of a larger labor force) to plant with olive trees and vineyards, and to build a water mill, expects revenues to start after three years. This may be sufficient for the vineyards and the watermills, but not for the olive trees. See also MM 2:506–9.

¹⁹¹ See above, 314–15.

¹⁹² See MM 4:187–89 (1228), 141–2, 145, 146–50; MM 4:17.

¹⁹³ Kantakouzenos, 2:192.

¹⁹⁴ V. Tsiouni, Παιδιόφραστος Διήγησις τῶν ζώων τῶν τετραπόδων (Munich, 1972), verses 396–401.

¹⁹⁵ Kantakouzenos, 2:184–5.

of oxen may have included the oxen of his *paroikoi*, but also his own. In cases such as these, any clearance of arable for cultivation could well have been organized and carried out with significant investment of funds, equipment, and organizational know-how on the part of the landlord.

For large estates, such investment was certainly profitable. I am aware of the fact that there is considerable resistance to discussing the profits of investments in societies where auto-consumption plays an important role. Nevertheless, some structural traits may be revealed by our necessarily incomplete calculations. I have already suggested that the monastery of the Great Lavra might receive, from cereal cultivation, revenues amounting to 13–15% of the value of the land.¹⁹⁶ These figures must not be taken at face value, but rather as an order of magnitude. It should also be remembered that they do not include the cost of oxen and equipment owned by the estate holder and that they are, in a sense, fictitious and do not represent true return on investment, since Lavra held most of its lands not by purchase but by donation. They are simply given here to show that an increase in arable lands, and cereal cultivation generally, was indeed profitable to the great landlord, with an adequate labor force. The great landlord also had the possibility of deploying his labor force in a number of ways, for example, allowing the peasants to work the land of others, and drawing revenues from it, or having them work on different parts of his estates, or renting out their oxen.¹⁹⁷

It was, I think, different in the case of landlords with medium-sized estates. An example of the kind of investment in which such landlords engaged may be found in the estate of the *sebastos* Kosmas Pankalos, around Serres. It consisted of arable, vineyards, and real estate in Serres, including houses, a winepress, and two bakeries. What he himself had added to the estate, in the form of melioration, was vineyards, houses, the winepress, and one bakery, not arable.¹⁹⁸ The best-studied case is that of Theodosios Skaranos, who turned his estate into a monastic endowment. According to his testament, written in 1270–74, he had 270 modioi of arable land, mostly though not entirely from donations, and 24 modioi of vineyard. He also had some income from and presumably the services of 11 households of *paroikoi* who owned no land, and paid a total of 9.75 nomismata in tax. Only one of his *paroikoi* had a pair of oxen and a piece of vineyard, while another had a donkey. The others were without any resources.¹⁹⁹ In the case of Skaranos, it is possible to attempt a highly speculative and in the end incomplete analysis of investment, cost, and revenues. In terms of labor power and equipment, Skaranos had 3 buffaloes, 2 oxen, 1 donkey, 2 horses, and agricultural equipment. I assume that his investment would have consisted of the price of the work

¹⁹⁶ Above, 343.

¹⁹⁷ As, e.g., in *Zographou*, no. 33 (1342), p. 78: the oxen of the monks of Zographou are working on the land of others.

¹⁹⁸ *Kutlumis*, no. 8; cf. nos. 7, 18.

¹⁹⁹ *Iviron*, 3: no. 59, lines 82–91; *Xéropotamou*, no. 9. On Skaranos, see J. Lefort, “Une exploitation de taille moyenne au XIII^e siècle en Chalcidique,” *Ἀφιέρωμα στὸν Νῆκο Σβορώνο* (Rethymnon, 1986), 362–72. Much of the data I am using comes from Lefort’s study; the attempt to estimate the cash equivalent is my own.

animals (36 nomismata for the buffaloes and oxen, 30 nomismata for the horse and donkey, a total of 66 nomismata)²⁰⁰ and the price of the agricultural implements (which is unknown, but for the sake of argument let us say 15 nomismata), for a total of 81 nomismata. In one year he had sown 153 modioi in winter and spring cereals; from that, if much, but not all of his land were first quality (yield 1:5), he would have gotten 405 modioi of wheat, 135 modioi of barley, and 225 of rye per year, which in monetary terms would give a gross revenue of 36.45 or 54.7 nomismata (the higher price results from the use of a higher estimate for the price of cereals).²⁰¹ Depending on the figures one uses, this would represent a return of 13%, 22%, 20%, or 33% on the cost of the land, a fictitious figure. In terms of returns on his investment of 81 nomismata, they would be 44–67%.

These enormous figures, however, are meaningless, for they do not take expenses into account. If we assume that one-fifth of his grain would go toward the next year's seed, and also assume, gratuitously, I admit, a depreciation of animals and equipment of 10% per year, his revenues from cereals drop to 21 or 35.6 nomismata a year, which still looks like a sizable sum. However, this is net revenues *except for the cost of labor*—unfortunately an unknown factor. There were twenty-eight peasants working for him, none of them possessing a piece of arable land. If they had to be fed from the revenues of the estate, the estate would be running a deficit.²⁰² In order to realize even a 4% profit on his investment of 81 nomismata, he would have to have, net of all expenses, 3.24 nomismata, something impossible if the peasants, too, made their living from this land. However, we know that, in the year he died, Skaranos, after having fed the fourteen monks of his monastery, had a disposable 200 modioi of wheat, which, as Lefort has indicated, may represent more than a year's reserves. His peasants must not have been dependent on just the work on his estates, although it is not at all clear how they made their living; perhaps they worked as day laborers. In any case, it must be assumed that some unknown part of the revenues of this estate, perhaps a considerable part, went to the cost of labor.²⁰³ The only thing that is clear from what has been said above is that, for an estate of this size, the profitability of investment in cereals was not very high and was helped by the fact that the land had privileged status (Skaranos had

²⁰⁰ I have estimated the price of the buffaloes to be the same as that of the oxen, and used the figure 9 nomismata each, according to MM 4:402–4 (he had 3 buffaloes, but I only included two because the third, a young beast, was clearly estate-bred); for other prices, see C. Morrisson and J.-C. Cheynet, "Prices and Wages in the Byzantine World," *EHB*. For the price of the horse and donkey I have used the figure 15 hyperpyra.

²⁰¹ My assumptions for the price of cereals are that barley would be worth about 33% less than wheat (see Morrisson and Cheynet, "Prices," tables 5 and 6), and rye might be worth half the price of wheat; the high and low price of wheat is 0.06 nomisma per modios in the place of production, and 0.09 nomisma per modios as an average. I have estimated the price of land as 1 nomisma per modios (*ibid.*) or 0.61 nomisma (*Lavra*, 4:169 n. 647).

²⁰² If we assume 15.5 modioi (201 kg) of grain per person per year (Lefort, "Rural Economy," 295), this would come to 434 modioi.

²⁰³ For the difficulties of estimating the cost of *corvée* labor, see above, 329–30. One rough and ready substitution for it might be the living costs of the worker and his family, which is what I have used here.

not bought most of it and paid no taxes on it) and a captive labor force. The modest prosperity of his estate must have owed more to his wine production. Skaranos did not, as far as we know, invest in any improvement of his arable land.

In sum, the cultivation of cereals was essential but not highly profitable, except for the great landlords who realized large surpluses that they marketed. Their profits depended in part on the absence of taxation and the enforced availability of a labor force. For a proprietor with a middle-sized holding, the profitability of cereals seems lower. For a peasant, 80 modioi of land might represent the breaking point of profitability. As for investment in the expansion of cereals cultivation, it profited the landlord more than the peasant, if, indeed, such a statement is meaningful in conditions where the cultivation of arable is essential for survival.

High-Yield Activities Other crops or activities of the agricultural economy were more profitable. The Byzantines recognized such assets, which they called *autourgia*, that is, properties that, after an initial outlay of capital (and labor), produced on their own, without further expense. This category includes vineyards, mills, pastures, brick kilns, and salt pans. The conservative eleventh-century landowner Kekaumenos advised people who wanted to invest in land to create *autourgia* as the most profitable way of going about their business.²⁰⁴

It will be noted that vineyards and pasture lands are in a different category from mills and ovens: the first form part of the primary economy of production, whereas mills and kilns take us into the secondary sector of the economy, that of processing of agricultural products and artisanal activity. It will also be noted that the perceived cost-free nature of *autourgia* stands only if one does not count labor as an expense. Indeed, in the Byzantine agricultural economy, where there was no labor market of any consequence (despite the existence, at all times, of hired hands), one can understand how the very considerable labor needed to maintain a vineyard, or the labor of the miller, was not taken into account by those who thought about profitable rural enterprises. Presumably, *autourgia* were considered “cost-free” because they did not need expensive animals and equipment (oxen, plows), and also because neither viticulture nor the cultivation of olive trees and gardens requires the annual investment of seed necessary in the cultivation of cereals. Finally, the absence of labor costs in the calculation of the profitability of *autourgia*, as the Byzantines saw it, is particularly appropriate to an economy where the landlord leases out this property and thinks of his revenues as net profit (apart from taxes); the labor was a cost only to the lessee.

The planting of vineyards, trees, and gardens and the erection of mills may be considered as capital investments in the sense that they increased the productive capacity of the land on which they were planted or erected.²⁰⁵ The most important investment

²⁰⁴ Rhalles and Potles, *Σύνταγμα*, 2:593–95; Πείρα Εὐσταθίου τοῦ Ῥωμαίου 38.74 (= Zepos, *Jus*, vol. 4). *Sovety i rasskazy Kekavmena*, ed. G. G. Litavrin (Moscow, 1972), 188.

²⁰⁵ See A. Laiou and D. Simon, “Eine Geschichte von Mühlen und Mönchen: Der Fall der Mühlen von Chantax,” *Bullettino dell’Istituto di Diritto Romano*, 3d ser., 30 (1992): 645, 655, 656.

of this type was made in viticulture, as the well-known Mediterranean complementarity of bread and wine would suggest. Much of the available information concerns gardens, vineyards, and mills, but we may assume that very similar circumstances obtained for the planting of olive trees and fruit trees. The profitability of investment can sometimes be estimated.

Gardens. These provide interesting indications of the rate of profitability and return on investment due to improvements in highly productive land. The main information comes from a case that involves a vegetable garden (κηποπεριβόλιον) just outside Thessalonike in the early fifteenth century. The land (whose extent, unfortunately, is unknown) belonged to the monastery of Iveron, which had rented it out to gardeners from Thessalonike for an annual sum of 59.5 hyperpyra, plus some dues in kind.²⁰⁶ In 1404, when Thessalonike returned to Byzantine sovereignty, the monastery leased out the entire piece of land to members of the well-known and well-connected family of the Argyropouloi, at an annual rent of 30 hyperpyra. The monks were later to claim that the low rent was due to the venality of the agent, the *ekklesiarches* Theodoulos, who was bribed. The Argyropouloi proceeded to effect improvements (consisting primarily of irrigation) on this land, mostly at their own expense, and with the use of hired labor.

The cost of the improvements was given differently by the two parties. The Argyropouloi claimed that they had spent 17,000 aspra, that is, 1,214 hyperpyra; of this, 15 hyperpyra had been in fact absorbed by the monastery, since the Argyropouloi had kept back half a year's rent. However, according to the inquiry conducted *in situ*, with calculation of the cost of labor and materials, the Argyropouloi had spent only 59 hyperpyra and 4 aspra. The difference is, of course, immense. If the Argyropouloi were telling the truth, they had invested 1,199 hyperpyra (1,214 minus the 15 they had retained from the monastery), whereas according to the monks they had spent only 44 hyperpyra. Both claims are undoubtedly exaggerated. Where there is no dispute is the increase in revenues. The Argyropouloi sublet the garden to the same gardeners who had held it before, first at an annual rent of 86 hyperpyra, which, by stages, became 115 hyperpyra (the dues in kind stayed the same). The rent of 115 hyperpyra is said to have been in effect "for many years." Thus the improvements had increased the revenues of the garden from 59.5 to 115 hyperpyra, an increase of almost 100%. This must have been a true increase of productivity, since the gardeners did not complain.

As for the returns on investment, the Argyropouloi ended up with a yearly income of 85 hyperpyra (115 minus the 30 they were paying to the monastery). If they had invested 44 hyperpyra, this is an immense return of 193%. Even if they had spent 1,199 hyperpyra, as they claimed, surely inflating their sums, they would have had a net profit of 7% a year, not at all a negligible sum, since it was risk free. We do not know the time limitation of the contract, but it was clearly long term, since its terms

²⁰⁶ *Iviron*, 4: nos. 97 (14 April 1421), and 98 (1 June 1421). On this, see K.-P. Matschke, *Die Schlacht bei Ankara und das Schicksal von Byzanz* (Weimar, 1981), 160ff, and A. P. Kazhdan, "Novye materialy po vnytrennei istorii Vizantii," X-XV vv.," *VizVrem* 13 (1958): 307.

were disputed seventeen years later. In the first case, they would have recovered their investment during the first year; in the second case they would have recovered it in fourteen years.

The decision of the judges (*katholikoi kritai*) of Thessalonike, confirmed by Emperor Manuel II, was to return the garden to the monastery. The Argyropouloi were allowed to keep their revenues of the last seventeen years, as long as they did not contest the decision. This great dampener on initiative, if it is at all generalizable, shows a very conservative attitude on the part of the monastery, a sure disincentive to the entrepreneurial spirit. In any case, the profitability of investment in improvements, and the way in which it could be realized, are evident here.²⁰⁷

Olive Trees The profitability of other crops or activities can sometimes be measured and sometimes not. Olive trees, in the Peloponnese, as in western Asia Minor, were a valued asset, and olive oil must be assumed to have been both profitable and marketable. In antiquity, olive trees might produce four liters of olive oil per year. In 1834, a bad year, olive trees in Olympia, in Greece, produced 1–3 *okades* (1.3–3.9 kg) of oil per tree, with the mode being around 2 *okades*. In a good year, this would be at least double, with a minimum yield of 2.6–7.8 kg per tree.²⁰⁸ Note that olive trees produce every two years. It has been estimated that a highly productive olive tree in Byzantium would yield a return on investment (i.e., to the price of the tree) of 20–25%. The only cost incurred after the initial investment would be labor, which is intensive during short periods of the year.²⁰⁹

Mills. We can calculate the worth of mills a little more closely.

Revenues (gross)

1282	8 nomismata (average)
1282	16 nomismata (average)
1282	17.5 nomismata ²¹⁰
1321	12 hyperpyra (average) ²¹¹
1383	40 hyperpyra (very devalued) average rent ²¹²

Tax

In the early 14th century: 1 to 2 hyperpyra, with other figures (e.g., 3) also given; average ca. 2 hyperpyra

Cost of Building a Mill

Hard to estimate; one mention of 50 (devalued) hyperpyra²¹³

²⁰⁷ A not dissimilar case, concerning urban real estate in Thessalonike, was decided in favor of the monastery in 1419: *Xénophon*, no. 32.

²⁰⁸ G. N. Metrophanes, “Φορολογικὸ καὶ γαιοκτητικὸ καθεστῶς τῆς ἐλαιοκαλλιέργειας στὸ Ἑλληνικὸ κράτος (1821–1860),” *Ἱστορικά* 20 (1994): 85ff. Cf. Lefort, “Rural Economy,” n. 132.

²⁰⁹ Morrisson and Cheynet, “Prices,” 822–23.

²¹⁰ P. Delehay, “Deux typika byzantins de l’époque des Paléologue,” in *Synaxaires byzantins, mémoires, typika* (London, 1977), art. 6.

²¹¹ *Chilandar*, no. 92.

²¹² MM 2:82, in Constantinople.

²¹³ *Kuthumus*, no. 35 (1377).

The returns on investment of a mill cannot be estimated given the uncertainty of the costs of construction. On the other hand, we do know that a mill pays the same tax as 100 modioi of best-quality arable land. The gross annual revenues of 100 modioi of best-quality land ($\frac{5}{8}$ of which would be cultivated) would be 28–31.5 hyperpyra. Against this revenue, however, one would have many expenses, including the seed, the price of the land, and the oxen, whereas the expenses of the mill would basically be the costs of labor. The annual revenue versus annual cost, then, would compare very favorably for mills, which seem to have been a coveted piece of property.

Vineyards In the case of vineyards, if we take the tax as a measure of the economic value of goods, we find that in this period the value of a piece of vineyard was, roughly speaking, eight to twelve times that of the best-quality arable land.²¹⁴ This is corroborated by the land prices, which are few and disparate for vineyards, and thus cannot be precisely calculated, but which in any case show a difference of a factor of 5.5 to 10 between vineyards and arable land. The value of deserted vineyards increased two or ten times when the land was planted.²¹⁵

Investment in *autourgia* was made by much more variegated categories of people than melioration of arable land. Landlords of some magnitude, both lay and ecclesiastical, cleared land for vineyards and olive trees, and erected mills, “at their own expense” or “at great expense.”²¹⁶ Sometimes the expenses of planting a vineyard are detailed.²¹⁷ Along with the great landlords, proprietors of more modest means also planted vineyards and built mills: Theodosios Skaranos had 24 modioi of vineyard, 8 modioi of which he himself had planted. Another proprietor of similar scale but with a different portfolio, Theodore Karabas, who lived in Thessalonike, had 61 modioi of vineyard; some of this came from the purchase of a piece of vineyard planted by Man-

²¹⁴ See Svoronos, “Le domaine de Lavra,” 158–60, and *Iviron*, 3:153; Lefort, “Fiscalité,” 63ff. I am comparing here only the base tax, which may be considered a fair indicator of comparable economic value. For tables showing value and tax rates of various types of property, see Schilbach, *Byzantinische Metrologie*, 235–63, which must be used carefully: see Morrisson and Cheynet, “Prices.”

²¹⁵ Eight to twelve times if we take taxation as an index, for in most cases the deserted land (for vineyards) was taxed at $\frac{1}{50}$ hyperpyron per modios, although in one case the tax was $\frac{1}{8}$ hyperpyron (*Iviron*, 3: no. 77). In 1384 the value of deserted vineyards was estimated at $\frac{6}{25}$ hyperpyra per modios, which increased to 10 hyperpyra after the vineyards were made productive: *Docheiariou*, no. 49 (Morrisson and Cheynet, “Prices,” table 7). A document of 1295 claims that 18 modioi of (planted) vineyard had a value of more than 300 nomismata, i.e., an average value of 16.67 nomismata per modios. *Iviron*, 3: no. 67. Cf. Oikonomides, “Role of the State,” 1012.

²¹⁶ See, e.g., the property of G. Phokopoulos, which he had “from purchase and from his own labor and expense”: *St. Jean Prodrome*, no. 44 (1352); the monks of St. Nicholas, near Serres, built four water mills: *Chilandar*, no. 20 (1319); in 1292, the Sebastos P. Doukopoulos mentions a water mill he had built on his *pronoia* land: *Iviron*, 3: no. 66; the monks of Iveron plant a vineyard on their own land: *Iviron*, 3:67 (1295). The monks of Hilandar build a mill: *Chilandar*, no. 115 (1327). In 1374, the *mezas primikerios* John and Anna Asanina Kontostephanina give to Pantokrator part ownership of a vineyard that they had brought into cultivation: *Actes du Pantokrator*, ed. V. Kravari, Archives de l’Athos (Paris, 1991), no. 9. In 1309, a *stratiotes*, Georgios Kalameas, bought an already functioning domain, and added to it a mill; all of this, with its *beltioseis*, he gave to Iveron: *Iviron*, 3: nos. 71, 72. In 1405, Radosthlabos gave the monastery of St. Paul half his goods, which included vineyards he had planted: Lefort, *Villages de Macédoine*, 25. In 1312 the bishop of Lakedaimon built mills and planted olive groves and gardens: Zakythinios, *Despotat*, 2:187.

²¹⁷ *Iviron*, 3: no. 67, and, especially, MM 2:506–9.

uel Biblodontes, along with some deserted vineyards (in toto, 4 modioi), in 1296; when Karabas made his will, in 1314, there are no deserted vineyards mentioned in this location, so perhaps he, too, had invested in some planting.²¹⁸

The inventory of his properties may help illuminate the ubiquitous aspect of this investment in vineyards. Karabas had urban real estate and invested his money mostly in vineyards, of which he had 61 modioi, while only a small part of his fortune was invested in cereals. The structure of his property was very different from that of Skaranos, with the predominance of vineyards and the small size of the arable the most eloquent difference. The explanation is, quite simply, that the “domain” of Skaranos was geared to self-sufficiency with some commercialization of crops, whereas that of Karabas was very much geared to the market: wine was a good cash crop. Indeed, Karabas was also, perhaps primarily, a merchant.²¹⁹

Thus we have here a clear case of investment in vineyards as a cash crop. What his investment was, what the running costs (i.e., labor) were, how high his returns were are impossible to estimate, although we can figure out the market value of his vineyards, which would have been in the vicinity of $14 \times 61 = 854$ hyperpyra.²²⁰ When Karabas composed his will, he had in hand 300 measures of wine (about 3,120 liters), 30 tetartia (1,728 kg) of wheat, and 10 tetartia (576 kg) of millet.²²¹ Certainly, his 61 modioi should have produced a very great deal more than 300 measures, and therefore he must already have sold the year’s crop. The case of Karabas, although it does not give us a clue as to return on investment, shows the impulse behind the acquisition of vineyards, by melioration or by purchase, and it was a market impulse. The rise in the price of wine after 1300 undoubtedly helped.

Similar investments may be seen in western Macedonia, among a population of independent landed proprietors of middle fortune. A man from Berroia (Ioannakios Achyraites) addressed a letter to Demetrios Chomatianos in the early thirteenth century, to complain that his guardian, Basil Krasinos, had misused his property. The paternal property of Achyraites had consisted, among other things, of productive vineyards (of an uncertain surface) and 64 modioi of abandoned vineyards. These were placed under cultivation by his guardian. In one year, the productive vineyards produced 900 measures of wine, approximately 9,225 liters. The guardian effected improvements on the abandoned vineyards, which soon became productive again. It is not surprising to learn, from the same document, that Krasinos was also engaged in trade.²²²

²¹⁸ The will is published in *Chilandar*, app. I, no. 27; the act of sale, *ibid.*, no. 12.

²¹⁹ On Karabas, see Laiou, “Η Θεσσαλονίκη,” 188. For an estimation of his fortune (1,110 hyperpyra), see C. Morrisson, “Byzantine Money: Its Production and Circulation,” *EHB* 917–18.

²²⁰ *Chilandar*, no. 29, shows, for 1314, an average price of 14.5 nomismata per modios of vineyard. Cf. Morrisson and Cheynet, “Prices,” table 7. They suggest that the return on investment in vineyards was 3:1. On the wine produced by one modios of vineyard in the 11th century, see Lefort, “Rural Economy,” 250 and n. 163.

²²¹ The *tetartion* is equal to the commercial *pinakion*, i.e., to one-fourth of a commercial modios or 57.6 kg. See Schilbach, *Byzantinische Metrologie*, 108.

²²² J. B. Pitra, *Analecta sacra et classica spicilegio solesmensi parata*, 7 vols. (Paris-Rome, 1876–82), 6: no. 84; cf. Laiou, *Mariage*, 157ff.

The relationship between arable land and vineyards runs along the middle range of the continuum between self-sufficiency and the marketing of agricultural products. For the great landlords, investment in vineyards must have combined self-sufficiency and production for the market. But to the peasant also, the vineyard (as well as, but much more than, olive trees and mills) was important indeed. The peasants needed cash, to pay their taxes or to acquire a few luxury goods, and they, too, cultivated vineyards in order to produce a cash crop. They built mills presumably in order to have their own grain ground cheaply, but also as a revenue-producing asset, as may be seen by agreements with monastic landlords, by which the *paroikoi* who had built a mill pay a tax on it to the landlord.²²³ Vineyards, as well as other *autourgia*, were the investment of the peasant, from which he drew most of his cash, and which led him into the monetized, market part of the agricultural economy.²²⁴ The terms on which he held these assets, after he had created them, made a difference in terms of income and profit.

When melioration of lands took place by agreement between the landlord and the person carrying out the βελτίωσις, there was a sharing of revenues, in conditions that varied according to circumstances. In one case, the monastery leased lands, to be planted with vineyards, at an annual rent (*pakton*) of 1 hyperpyron per 10 modioi.²²⁵ In other cases, the agreement was that the landlord (the monastery of Lavra) and the man who built the mill would share the ownership and the revenues equally.²²⁶ In times when the landlord was admittedly incapable of making meliorations, because of lack of labor power, the share could be very different indeed: in 1424 an agreement between the monasteries of Dionysiou and Docheiariou provided for a share of four-fifths of the revenues of melioration going to the investor (Dionysiou) and one-fifth to the landlord.

In the many cases where vineyards were planted or mills were erected illegally, on land belonging to someone else, the arrangements again were different depending on circumstances and on the presentation of interlocking rights. In a significant number of cases, however, the resolution of the dispute would recognize that the investment involved in melioration gave rights of exploitation to those who had made the melioration. Thus, for instance, in 1294, despite the fact that a mill had been built illegally on

²²³ *Chilandar*, no. 19.

²²⁴ The documentation on peasant investment in vineyards is too abundant to mention specifically. See, for example, the case of a certain Glykys who had rented 10 modioi of land from Iveron to plant with vineyards: *Iviron*, 3: no. 67; in 1323, some peasants of Zagora sell to Hilandar a "newly planted vineyard" of 7 stremmata, which belonged to them "because they planted it" (ἐξ ἀναστήματος), at 50 hyperpyra: *Chilandar*, no. 93. A year later, a woman from the same area sold to Hilandar her vineyard for 135 nomismata; if the average price was the same as in 1323, she had a vineyard of 21 modioi, all ἐξ ἀναστήματος, of which she sold 19 modioi to Hilandar and kept 2 for herself: *ibid.*, no. 99. A *paroikos* of Hilandar builds a mill: *Xéropotamou*, no. 17. As for vineyards belonging to *paroikoi* in Macedonia ἐξ ἀναστήματος, see Laiou-Thomadakis, *Peasant Society*, table V-8. Cf. also, in Asia Minor: the *paroikoi* of Syrgares owned βελτιώματα (vineyards and trees) in hereditary right: MM 4:35–41. In the Peloponnese the investment of the peasant might be in olive trees and silk production.

²²⁵ *Iviron*, 3: no. 67.

²²⁶ *St. Jean Prodrome*, no. 31 (1334). On all that follows, see Laiou and Simon, "Eine Geschichte," 645ff, where one will find the full documentation and analysis of the various permutations.

land belonging to the monastery of Tzintziloukiotissa, and that there was no question in law of the rights of the monastery, the person who had built the mill was to retain two-thirds of it over two generations.²²⁷ In other cases, the fact that peasants or monastic landlords had planted vineyards on land belonging to another person or institution was sufficient to give them rights of exploitation and even of ownership, the justification being that otherwise “they would suffer much harm” (πολλή ὑπῆρχεν ἡ βελτίωσις αὐτῶν . . . καὶ μέλλει γενέσθαι ἡ θλίψις αὐτῶν πολλή) or much economic harm (ζημίαν). The arrangement might be that the meliorations were given over to those who had effected them, who might or might not pay to the landlord a tax—in the latter case, one may suggest that the persons affecting the melioration received rights of ownership. Thus the capital investments we are discussing created a presumption of ownership, which people were arguing to the emperor and to other mediating or judicial bodies, in Asia Minor as well as Macedonia, throughout the thirteenth and fourteenth centuries; indeed, similar cases are also known from areas that had passed out of Byzantine control.²²⁸

Among the independent proprietors of western Macedonia, the arrangements were similar in spirit. Deserted vineyards were bought and made productive “at great expense.”²²⁹ Land was turned from cereal cultivation to viticulture.²³⁰ Once the vineyards had been made productive, disputes sometimes erupted. In one case, the decision was very firmly in favor of the person who had effected the melioration, as opposed to the owner of the land: the investor would receive, throughout his lifetime, two-thirds of the wine, and the owner would receive one-third; he would get the entire vineyard after the death of the investor.²³¹

Clearly, the efforts to increase productivity and revenues could easily lead to conflictual situations, since not all land, after all, is easy to turn into vineyards, nor are all places equally appropriate for the erection of water mills. What is of interest here is not the legal parameters of these conflicts but their economic significance. Since such land reclamations were labor intensive, and depended primarily on the labor of peasants, it is important to note that the value of labor, although not directly calculated, nevertheless was recognized. In the cases where the *paroikoi* or other peasants acquired rights of ownership, the economic value of meliorations increased significantly: in such cases, what they had to pay out was only the tax ($\frac{1}{5}$ – $\frac{1}{8}$ hyperpyron per modios in early 14th-century Macedonia), quite a bit lower than what they would have had to pay if they were renting the vineyard or the mill, either in cash or through a revenue-sharing arrangement.

Peasant investment in vineyards could be extensive: sometime before 1300, the in-

²²⁷ *Esphigménou*, app. E; Laiou and Simon, “Eine Geschichte,” 648–49.

²²⁸ For the documentation, see Laiou and Simon, “Eine Geschichte,” 650ff. For the later period, see *Chilandar*, no. 162 (1356).

²²⁹ D. Chomatianos, Πονήματα, in Pitra, *Analecta* (as above, note 222), 6: no. 105 (involving an inhabitant of Vodena).

²³⁰ *Ibid.*, no. 82.

²³¹ *Ibid.*, no. 82, p. 366.

habitants of the village of Abramiton, in the Chalkidike, planted 400 modioi of new vineyards, a very substantial investment.²³² Vineyards were often an object of land transaction, being sold either under duress, in times of hardship,²³³ or perhaps for profit.²³⁴ Thus investment in potentially cash-producing assets was in the hands of peasants as well as lay and ecclesiastical landlords, with the peasants investing primarily labor, and the landlords sometimes investing land, and, when they undertook and organized the melioration themselves, funds (for paying day laborers, for example), protection (either on their own domains or, even, by sending their peasants out to cultivate the lands of others), and a certain managerial expertise. Landlords with middle-sized holdings were also investing in vineyards. Returns on such investments were, as we have seen, higher than on arable, and to a certain degree they were shared by peasants and landlords. But the relative worth of these investments was probably greater in the case of the peasants, who were able to exploit these small parcels of revenue-producing land; indeed, investments in vineyards (and the other investments peasants could make) are a significant indication of adaptability and perhaps a response to market demand.²³⁵ The same observations, *mutatis mutandis*, hold true for olive trees in Asia Minor, and, I suppose, in the Peloponnese, and for raw silk production in the Frankish and Venetian Peloponnese. The importance of these investments was greatest through the middle of the fourteenth century, as long as the economy remained articulated and labor was relatively adequate.

The Disarticulation of the Agrarian Economy

The productiveness and prosperity of the agricultural economy until the middle of the fourteenth century could not be sustained thereafter. The political and military events briefly outlined above²³⁶ were overwhelming. Wars, raids by Turkish piratical expeditions, and looting armies on land destroyed the security that, relative though it may have been, nevertheless existed earlier and was necessary for the economy. Monasteries began to build towers, to provide some security for people and foodstuffs.²³⁷ Part of the prosperity of the countryside had been the result of a relatively well articulated economy that involved exchange. After the middle of the fourteenth century, communications were badly disrupted. For example, the Via Egnatia became impassable and communications between Constantinople and Thessalonike were possible only by sea.²³⁸ First because of the great civil war and then because of the Ottoman incursions,

²³² *Xénophon*, no. 3.

²³³ For example, MM 4:399ff (1271), 402ff (1271), 408ff (1272).

²³⁴ This may be the case of the *paroikoi* of Lavra, inhabitants of the village Pinson, who, before 1321, sold 104 modioi of vineyard to some inhabitants of Thessalonike: *Lavra*, 3: no. 109, line 945; cf. lines 952–53.

²³⁵ Cf. the remarks of Aymard, "Autoconsommation," 1392ff, esp. 1395–96.

²³⁶ A. E. Laiou, "Political History: An Outline," *EHB*, 26ff.

²³⁷ See, e.g., V. Mošin, *Supplementa ad acta graeca Chilandarü* (Ljubljana, 1948), no. 7 (1353); *Dionysiou*, no. 13 (1414).

²³⁸ Laiou, "Η Θεσσαλονίκη," 185–86.

Table 6
Population and Resources of Villages of Macedonia

Village	Households	<i>Zeugaria</i>	<i>Boidia</i>	Land (in modioi)	Vineyards (in modioi)
1321					
Drymosyrta	56	16	11	—	—
Pinson and Loroton	103	57	19	11	325
Gomatou	104	13	15	32	121
1409					
Drymosyrta	35	11	—	—	—
Pinson and Loroton	20	2	—	—	—
Gomatou	21	—	7	—	—

cities were cut off from their hinterland for long periods of time, and the normal country-city exchange became dysfunctional.

The worst problem was the depopulation of the countryside, brought about by the wars and the outbreaks of the plague. The general picture of depopulation emerges from all the available sources, but details can be recovered only for a few areas. In Macedonia, we have the figures for three villages belonging to the monastery of Lavra. The comparison between the population and the resources in 1409 and 1321 is instructive (Table 6).

This stark picture of decline of human and animal resources is made even starker in the records for the island of Lemnos, where the monasteries of Lavra, Iveron, Pantokrator, Dionysiou, and others had domains. In the mid-fourteenth century, the lands of Lavra were extensive, indeed had increased. But in 1355 and 1361, when censuses were taken, the number of *paroikoi* had decreased precipitously (two families are mentioned in 1361).²³⁹ In the 1420s and early 1430s, a series of documents from the monastery of Dionysiou mention abandoned houses, old winepresses, abandoned vineyards, and deserted villages. The *paroikoi* of the monastery were few and far between. Revenues had declined to such an extent that the monastery was receiving, instead of revenues from the domain at Lemnos, subsidies in kind from the emperor: 16 modioi of wheat, 4 modioi of pulses, and 3 kantaria of cheese, truly pitiful amounts. In 1425 the emperor once again replaced this subsidy with a donation of land.²⁴⁰

²³⁹ *Lavra*, 4:147–48.

²⁴⁰ *Dionysiou*, nos. 21 (1425), 22 (1425), 25 (1430). Cf. *Iveron*, 4: no. 99 (1430–48). On Lemnos see also J. Haldon, "Limnos, Monastic Holdings and the Byzantine State, ca. 1261–1453," in *Continuity and Change in Late Byzantine and Early Ottoman Society*, ed. A. Bryer and H. Lowry (Birmingham–Washington, D.C., 1986), 161–212.

People were few, and land was cheap. The price of land fell, as one might expect.²⁴¹ Indeed, land must have been virtually worthless toward the end of the fourteenth century. No wonder it was not taxed in the fifteenth century.²⁴² The price of grain rose, not only because of political instabilities that disrupted trade²⁴³ but also because of decline in production.

The lack of manpower may have given the peasantry a certain bargaining power. In Lemnos, in the 1420s, peasant households were given land by the monastery, sometimes added to land they already held. The *paroikoi* of Dionysiou on this island had a great deal of land: with one or two exceptions, each household had 300–400 modioi of arable, immense quantities compared to the amounts of land held or cultivated by peasants in the first half of the fourteenth century. It is quite clear that this land could not all be cultivated, especially since this documentation mentions no oxen or very few. Another document, undated, but from the late fourteenth or early fifteenth century, shows peasants receiving very large quantities of land from the state: households with up to 600 modioi of arable are mentioned, although no household owns more than a yoke of oxen, and indeed one man with 600 modioi has only one ox (but also two horses and two donkeys).²⁴⁴ Still, when oxen are mentioned on Lemnos, their ratio per household is relatively high, ranging from 0.8 to 1.5 oxen per household; in the few villages of Macedonia for which we have information in 1409, the ratio is 0.4, half what it was in 1321.

The areas for which we have relatively detailed information are all close to the coast—in the Chalkidike or on the island of Lemnos. It is legitimate to wonder whether the depopulation might have been less acute in the interior, where the plague would have penetrated less, and where the dangers posed by Turkish and other piratical incursions would also have been fewer. One also wishes for better information about western Greece and the Peloponnese. For the despotate of the Morea, the best we can do is recall that there are outbreaks of the plague attested throughout the second half of the fourteenth century and the first half of the fifteenth, that Kydones considered it an impoverished area, and that Plethon speaks primarily of the natural resources of the area, not of actual production. His reform proposals aim, among other things, at improving the poor condition of the peasantry, which may have been due to a decline in both manpower and production.²⁴⁵

The peasants who survived the disasters of the second half of the fourteenth century may have been affected less than the landowners, who suffered great loss of productive

²⁴¹ Morrisson and Cheynet, “Prices” table 4; the last two entries are very particular cases, since Constantinople was, at that time, under blockade, and the price of available land had skyrocketed.

²⁴² N. Oikonomides, “Ottoman Influence on Late Byzantine Fiscal Practice,” *SüdoStF* 45 (1986): 12–13.

²⁴³ E. A. Zachariadou, “Prix et marchés des céréales en Roumanie (1343–1405),” *Nuova rivista storica* 61 (1977): 291–306, shows stability in the price of grain during the first decades of the 14th century, and a sharp rise in the late 14th century.

²⁴⁴ *Pantocrator*, app., 189–96. Cf. Lefort, “Rural Economy,” 0:000.

²⁴⁵ Above, 318, and A. E. Laiou, “Economic Thought and Ideology,” *EHB* 115–20.

capacity. The great lay landowners met with reversals of fortune after the great civil war, losing much of their property. The Serbian conquest of Macedonia certainly cost a number of lay landowners their properties, but that did not necessarily have economic consequences. On the other hand, we know that when these lands came into Byzantine hands again, some landowners found that their estates had become unproductive and that they were not in a position to make them productive again. Such was the case of Anna Kantakouzene Palaiologina, who in the end had to sell her large domain to the monastery of Docheiariou for much too low a price.²⁴⁶ She ascribed the destruction of her estate to the Serbian occupation, but the problem, as she herself stated, was that the labor force had disappeared—surely a result of the general depopulation of Macedonia. It is also telling that she and her husband thought that only a monastery would have the possibility of restoring the capacity of the domain. Indeed, there was a certain reconcentration of economic power in the hands of the monasteries and out of the hands of lay proprietors throughout the late fourteenth and fifteenth centuries in Macedonia. Despite the fact that half the possessions of the Athonite monasteries were distributed to laymen as military *pronoiai* after the Byzantine defeat at the battle of the Marica in 1371, the monasteries soon emerged as the main stable economic power in the countryside. In the late fourteenth and early fifteenth centuries, there is, once again, transfer of land and resources from laymen to the monasteries.²⁴⁷ This was a trend that affected primarily the great lay landowners. The provincial landowners of moderate means but solid attachment to their cities and their lands may have profited from the upheavals and solidified their position. Such, at least, is the picture that emerges from the city of Serres in the late fourteenth century.²⁴⁸ It may also be the case in the Morea, where the notorious political independence of the local aristocracy may have had economic foundations.

By the early fifteenth century, there were efforts to redress the agrarian economy. These were undertaken by the state, which possessed lands (empty and uncultivated), could command some labor, and also had resources to invest from other activities, possibly from trade or from trade duties, even though these were also declining. In Lemnos as in Macedonia, Byzantine emperors distributed lands to the peasants and tried to give incentives for the restoration of land to cultivation. The beneficiaries were, once again, the monasteries. The donation of Mariskin, an abandoned village in Kassandra, to the monastery of Dionysiou by Emperor John VII is an interesting indication of how bad things were and what the effort to redress them entailed. He gave the monastery the abandoned village, promising that within three years he would put a certain amount of that land into cultivation. For its part, the monastery would build a tower for defense; it would seek out peasants to install on the land, and the peasants would owe no taxes to the state (1408). Ten years later, the monastery had not yet built the tower. It was built by the despot Andronikos Palaiologos, who also promised to

²⁴⁶ *Docheiariou*, no. 42 (1373).

²⁴⁷ N. Oikonomides, "Monastères et moines lors de la conquête ottomane," *SüdostF* 35 (1976): 1–10.

²⁴⁸ Laiou, "Κοινωνικές δυνάμεις στis Σέρρες," in *Οι Σέρρες και η περιοχή τους* (as above, note 181).

install men there and to give whatever else was necessary for the melioration of the domain. Two years after that, the land seems to be under cultivation; the monks then asked for more land and, promising to bring in new men, for land to be given them again, so that these peasants might make a living. The effects of depopulation are, therefore, still evident, as is the process of rehabilitation of a domain: it is an expensive enterprise, undertaken by the state and the landlords (primarily the monasteries), and its success depends on the ability to attract a labor force.²⁴⁹

The privileged position of the monasteries extended to the marketing of agricultural products. In 1408 Emperor Manuel II, who was then in Thessalonike, issued a privilege in favor of the monasteries of Mount Athos. The monks were given special conditions in which to market their products. They were relieved of the obligation to provide wheat for the biscuit of the seamen, thus retaining more of their surplus than did other landlords. They were relieved of the payment of taxes on flocks, which means that the products of animal husbandry came cheaper to them than to others. They did not have to pay tax on their wine sold in taverns. They were allowed to sell their wine in Thessalonike freely; the “monopoly” practiced by the governor of the city, that is, the practice of delaying the sale of wine until “his own” had been sold, was discontinued. Thus the monasteries were helped by the state in the marketing of their agricultural produce. They profited, too, from the fact that they held coveted real estate, near or in the cities, which they could rent out to entrepreneurial spirits like the Argyropouloi. However, the case of the Argyropouloi also suggests that the monasteries were rather conservative in their view of investment and profits.²⁵⁰

Despite the difficulties outlined here, the dwindling Byzantine territories did export both wine and grain in the late fourteenth century. They did so sporadically: Thessalonike, for example, cut off from its countryside over long periods of time, became an importer rather than an exporter of grain. But Byzantine Thrace exported grain to Genoa in the fourteenth and fifteenth centuries. The Peloponnese exported grain and other foodstuffs to Italy at the time Pletho was formulating his reform proposals. Emperor John V tried, in 1362, to protect the winegrowers of Thrace by forbidding the importation, into Constantinople, of the cheaper wine of the Peloponnese. He ascribed the high price of the wine grown in the area around Constantinople to the high costs of cultivating vineyards, which must refer to a shortage of labor.²⁵¹

The fact that there was, in certain areas, a surplus of agricultural products does not mean that the agricultural economy was healthy. It may have been the result of a number of factors. It is possible, for example, and indeed probable, that the population of the cities dropped more than that of the countryside; the relative decline in demand might create a surplus that would be exportable. There is also a simpler explanation:

²⁴⁹ *Dionysiou*, nos. 10, 13, 16, 17, 18, 20. See also the donations of John VII (1407) of the revenues of lands he improved in Kassandreia, to six monasteries: *Lavra*, 3: no. 159.

²⁵⁰ V. Mošin, “Akti iz svetogorskih arhiva,” *Spomenik Srpska kraljevska Akademija* 91 (1939): no. 2, and cf. Laiou, “The Economy of Byzantine Macedonia.”

²⁵¹ G. M. Thomas, *Diplomatarium Veneto-Levanticum*, 2 vols. (Venice, 1889; repr. New York, 1966), 2:84–85.

Byzantine emperors, whose agents sometimes marketed the grain of Thrace, had good relations with the Genoese and chose to export their grain to Genoa, even though there might be shortages in Constantinople. The Byzantine economy was disaggregated and disarticulated, the normal exchange patterns no longer functioned, and this may have resulted in the export of the small surplus that could be gathered.

Conclusion

The Byzantine agricultural economy in the thirteenth century and until the middle of the fourteenth was both productive and relatively well integrated with the rest of the economy. At different times in different areas there is good evidence of population expansion, establishment of new villages, land clearance, and meliorations. A part of the peasantry was relatively well-off, much of the peasantry was, in one way or another, for positive or negative reasons, involved in the economy of exchange as well. But the progressive impoverishment of the peasantry, evident already in the first half of the fourteenth century, boded ill, if for no other reason because it necessarily entailed the decline of a certain aggregate demand, limited and periodic, to be sure, but nonetheless real. There was concentration of resources in the hands of large landowners, who must have had considerable surpluses. The landowner of moderate means and the combination of landowner-merchant were promising features of the countryside.

The multiple problems of the mid-fourteenth century, some evident even in the earlier period, brought a decline of production and a restructuring of property in the countryside. The peasantry may have profited to some extent; the provincial lay landowners may also have done well, at least in some areas. The upper levels of the aristocracy lost their fortunes, and eventually there was reconcentration of property in the hands of the larger and more privileged monasteries, at least in Macedonia. The monasteries, however, did not, in this late period, show great versatility or innovative spirit, at least as far as the agrarian economy was concerned. The agrarian economy, under severe strain, had to wait, for its recovery, until the effects of epidemics had been reversed, security had been reestablished, and communications restored: that is, until the firm establishment of the Ottomans in the Balkans.

Bibliography

I. Sources

- Actes de Chilandar*, ed. L. Petit. *VizVrem* 17 (1911). Reprint, Amsterdam, 1975.
Actes de Dionysiou, ed. N. Oikonomides. Archives de l'Athos. Paris, 1968.
Actes de Docheiariou, ed. N. Oikonomides. Archives de l'Athos. Paris, 1984.
Actes d'Esphigménou, ed. J. Lefort. Archives de l'Athos. Paris, 1973.
Actes d'Iviron, ed. J. Lefort, N. Oikonomides, and D. Papachryssanthou. Archives de l'Athos. 4 vols. Paris, 1985–95.
Actes de Kastamonitou, ed. N. Oikonomides. Archives de l'Athos. Paris, 1978.

- Actes de Kullumus*, ed. P. Lemerle. 2d ed. Archives de l'Athos. Paris, 1988.
- Actes de Lavra*, ed. P. Lemerle, A. Guillou, N. Svoronos, and D. Papachryssanthou. Archives de l'Athos. 4 vols. Paris, 1970–82.
- Actes du Pantokrator*, ed. V. Kravari. Archives de l'Athos. Paris, 1991.
- Actes de Philothée*, ed. W. Regel, E. Kurtz, and B. Korablev. *VizVrem* 20 (1913): appendix.
- Actes de Saint-Pantéléemôn*, ed. P. Lemerle, G. Dagron, and S. Ćirković. Archives de l'Athos. Paris, 1982.
- Actes de Xénophon*, ed. D. Papachryssanthou. Archives de l'Athos. Paris, 1986.
- Actes de Xéropotamou*, ed. J. Bompaire. Archives de l'Athos. Paris, 1964.
- Actes de Zographou*. ed. W. Regel, E. Kurtz, and B. Korablev. St. Petersburg, 1907. Reprint, Amsterdam, 1969.
- Les archives de St. Jean Prodrome sur le mont Ménécée*, ed. A. Guillou. Paris, 1955.
- Arkadiou Vatopedinou, “Αγιορειτικά Ἀνάλεκτα ἐκ τοῦ ἀρχείου τῆς μονῆς Βατοπεδίου.” In Γρηγόριος ὁ Παλαμῆς. Vol. 3. Thessalonike, 1919.
- Balducci Pegolotti, F. *La pratica della mercatura*, ed. A. A. Evans. Cambridge, Mass., 1936.
- Bees, N. “Unedierte Shriftstücke aus der Kanzlei des Johannes Apokaukos des Metropoliton von Naupaktos (in Aetolien).” *BNJ* 21 (1971–76): no. 67.
- Cammelli, G., ed. *Démétrius Cydonès, Correspondance*. Paris, 1930.
- Ioannis Cantacuzeni eximperatoris, historiarum libri quattuor*, ed. L. Schopen and B. G. Niebuhr. 3 vols. Bonn, 1828–32.
- Chomatianos, D. Πονήματα. In J. B. Pitra, *Analecta, sacra et classica spicilegio solesmensi parata*. Vol. 6. Paris-Rome, 1891.
- Constantine Porphyrogenetos. *De cerimoniis aulae byzantininae*, ed. J. J. Reiske. 2 vols. Bonn, 1829.
- Delehaye, P. “Deux typika byzantins de l'époque des Paléologues.” In *Synaxaires byzantins, ménologes, typika*. London, 1977.
- Eustratiades, S. “Γρηγορίου τοῦ Κυπρίου Ἐπιστολαί.” Ἐκκλησιαστικός Φάρος 2 (1909).
- Nicephori Gregorae Byzantina historia*, ed. L. Schopen and I. Bekker. 3 vols. Bonn, 1829–55.
- Joannou, P. “Vie de S. Germain l'Hagiorite par son contemporain le patriarche Philothée de Constantinople.” *AB* 70 (1952): 35–115.
- Jus graecoromanum*, ed. J. and P. Zepos. 8 vols. Athens, 1931.
- Kugéas, S. “Notizbuch eines Beamten der Metropolis in Thessalonike aus dem Anfang des XV. Jahrhunderts.” *BZ* 23 (1914/19): 148–63.
- Lambros, Sp. “Κυπριακά καὶ ἄλλα ἔγγραφα ἐκ τοῦ Παλατίνου κώδικος 367 τῆς βιβλιοθήκης τοῦ Βατικανοῦ.” *Νέος Ἑλλ.* 15 (1921): 337–56.
- . *Παλαιολόγια καὶ Πελοποννησιακά*. 4 vols. Athens, 1912–30.
- Lamprecht, H. *Untersuchungen über einige englische Chronisten des zwölften und des beginnenden dreizehnten Jahrhunderts*. Torgau, 1937.
- Litavrin, G. G., ed. *Sovety i rasskazy Kekavmena*. Moscow, 1972.
- Longnon, J., and P. Topping. *Documents sur le régime des terres dans la principauté de Morée au XIVe siècle*. Paris, 1969.

- Miklosich, F., and J. Müller. *Acta et diplomata graeca medii aevi sacra et profana*. 6 vols. Vienna, 1860–90.
- Mošin, V. “Akti iz svetogorskih arhiva.” *Spomenik Srpska kraljevska Akademija* 91 (1939).
———. *Supplementa ad acta graeca Chilandarii*. Ljubljana, 1948.
- Pachymères, Georges, Relations historiques*, ed. A. Failler. 2 vols. Paris, 1984.
- Georgii Pachymeris, De Michaelē et Andronico Palaeologis, libri tredecim*, ed. I. Bekker. 2 vols. Bonn, 1835.
- Papadopoulos-Kerameus, A. “Συνοδικὰ γράμματα Ἰωάννου τοῦ Ἀποκαύκου.” *Byzantis* 1 (1909): 3–30.
- Peira: Πείρα Εὐσταθίου τοῦ Ῥωμαίου*. In *Jus graecoromanum*, ed. J. Zepos and P. Zepos. Vol. 4. Athens, 1931.
- Pétridès, S. “Jean Apokaukos, Lettres et autres documents inédits.” *IRAIK* 14 (1909): 69–100.
- Pitra, J. B. *Analecta sacra et classica spicilegio Solesmensi parata*. 7 vols. Paris-Rome, 1876–82.
- Regel, W. Χρυσόβουλλα καὶ γράμματα τῆς ἐν τῷ Ἁγίῳ Ὄρει ἱερᾶς καὶ σεβασμίας μεγίστης μονῆς τοῦ Βατοπεδίου. St. Petersburg, 1898.
- Rhalles, G., and M. Potles. *Σύνταγμα τῶν θείων καὶ ἱερῶν κανόνων*. 6 vols. Athens, 1852–59.
- Sanuto, Marin. *Vitae Ducum Venetorum*. In *Rerum Italicarum Scriptores*, ed. L. A. Muratori. Vol. 22. Milan, 1733.
- Sathas, K. *Μεσαιωνικὴ Βιβλιοθήκη*. 7 vols. Venice, 1841–1914.
- Schreiner, P. *Die byzantinischen Kleinchroniken*. 3 vols. Vienna, 1975.
- Skoutareiotēs, Ἄωνύμου Σύνοψις Χρονικὴ. In *Μεσαιωνικὴ Βιβλιοθήκη*, ed. K. Sathas. Vol. 7. Venice, 1894.
- Thomas, G., *Diplomatarium Veneto-Levantinum*. 2 vols. New York, 1966.
- Tsiouni, V. *Παιδιόφραστοις Διήγησις τῶν ζῶν τῶν τετραπόδων*. Munich, 1972.
- Uspenskii, Th. “Vizantiiskie zemlemery.” In *Trudy VI Archeologicheskogo s’ezda v Odessa*. Vol. 2. (Odessa, 1888).
- Vranousi, E. *Βυζαντινὰ ἔγγραφα τῆς Μονῆς Πάτμου*. 2 vols. Athens, 1980.

II. Literature

- Ahrweiler, H. “L’histoire et la géographie de la région de Smyrne entre les deux occupations turques (1081–1317), particulièrement au XIIIe siècle.” *TM* 1 (1965): 2–204.
- Angelov, D. “Prinos kum narodynostinite i pozemelni otnoshenija v Makedonija (Epirskija Despotat) prez purvata cetrvurt na XIII vek.” *Izvestija na kamarata na narodnata kultura, serija: Humanitarni nauki* 4.3 (1947): 3–46.
- Angold, M. *A Byzantine Government in Exile: Government and Society under the Lascarids of Nicaea (1204–1261)*. Oxford, 1975.
- Antoniadis, H. “Villages désertés en Grèce: Un bilan provisoire.” In *Villages désertés et histoire économique: Les hommes et la terre*, Vol. II. Paris, 1965.
- Ashtor, E. *Levant Trade in the Later Middle Ages*. Princeton, N.J., 1983.

- Asselain, J.-C. *Histoire économique de la révolution industrielle à la première guerre mondiale*. Paris, 1985.
- Aymard, M. "Autoconsommation et marchés: Chayanov, Labrousse ou Le Roy Ladurie?" *AnnalesESC* 38 (1983): 1392–1410.
- Balard, M. *La Romanie génoise, XIIe–début du XVe siècle*. 2 vols. Rome-Genoa, 1978.
- Bardhan, P. K., and T. N. Srinivasan. "Cropsharing Tenancy in Agriculture: A Theoretical and Empirical Analysis." *American Economic Review* 61 (1971): 48–64.
- Charanis, P. "The Monastic Properties and the State in the Byzantine Empire." *DOP* 4 (1948): 51–118.
- Cheung, S. N. S. *The Theory of Share Tenancy*. Chicago-London, 1969.
- Cheyne, J.-C., E. Malamut, and C. Morrisson. "Prix et salaires à Byzance (Xe–XVe siècle)." In *Hommes et richesses dans l'Empire byzantin*. Vol. 2. Paris, 1991.
- Chvostova, K. V. *Osobennosti agrarnopravovykh otnoshenii v pozdnei Vizantii, XIV–XV vv.* Moscow, 1968.
- Dertilis, G. "Terre, paysans et pouvoir économique (Grèce, XVIIIe–XXe siècles)." *AnnalesESC* 47 (1992): 273–91.
- Dölger, F. *Beiträge zur Geschichte der byzantinischen Finanzverwaltung, besonders des 10. und 11. Jahrhunderts*. Leipzig, 1927.
- Dunn, A. "The Exploitation and Control of Woodland and Scrubland in the Byzantine World." *BMGs* 16 (1992): 235–98.
- Estopañan, S. C. *Bisancio y España: El legado de la basilissa Maria y de los déspotas Thomas y Esaú de Joannina*. Barcelona, 1943.
- Ferjančić, B. "Posedi poroditse Maliasina u Tesaliji." *ZRVI* 9 (1966): 33–48.
- . "Stočarstvo na posedima svetogorskih manastira u srednjem veku." *ZRVI* 32 (1993): 35–127.
- . *Tesalija u XIII i XIV veku*. Belgrade, 1974.
- Haldon, J. "Limnos, Monastic Holdings and the Byzantine State, ca. 1261–1453." In *Continuity and Change in Late Byzantine and Early Ottoman Society*, ed. A. Bryer and H. Lowry. Birmingham–Washington, D.C., 1986.
- Hodgetts, C. "Venetian Officials and Greek Peasantry in the Fourteenth Century." *Kathetria: Essays Presented to Joan Hussey for Her 80th Birthday*. Camberley, 1988.
- Hommes et richesses dans l'Empire byzantin*. 2 vols. Paris, 1989–91.
- Jacoby, D. "Les états latins en Romanie: Phénomènes sociaux et économiques (1204–1350 environ)." *XVe Congrès international d'études byzantines: Rapports*. Athens, 1976.
- . "Silk Production in the Frankish Peloponnese: The Evidence of Fourteenth-Century Surveys and Reports." In *Travellers and Officials in the Peloponnese: Descriptions–Reporters–Statistics*, ed. H. Kalligas. Monemvasia, 1994.
- Johnson, D. G. "Resource Allocation under Share Contracts." *Journal of Political Economy* 58 (1950): 111–23.
- Kalopissi-Verti, S. *Dedicatory Inscriptions and Donor Portraits in Thirteenth-Century Churches of Greece*. Vienna, 1992.
- Kaplan, M. *Les hommes et la terre à Byzance du VIe au XIe siècle: Propriété et exploitation du sol*. Paris, 1982.

- Kazhdan, A. P. *Agrarnye otnosheniia v Vizantii, XII–XIV vv.* Moscow, 1952.
- . “Novye materialy po vnytrennei istorii Vizantii, X–XV vv.” *VizVrem* 13 (1958): 302–13.
- Kondov, N. K. “Über den wahrscheinlichen Weizenertrag auf der Balkanhalbinsel im Mittelalter.” *EtBalk* 10 (1974): 97–109.
- . “Produktionsorganisatorische Verschiebungen bei dem Weinbau in der ersten Hälfte des XIV. Jahrhunderts im Gebiet des unteren Strymons.” *EtBalk* 9.1 (1973): 67–76.
- Kravari, V. *Villes et villages de Macédoine occidentale.* Paris, 1989.
- Kula, W. *Teoria economica del sistema feudale: Proposta di un modello.* Einaudi, 1970.
- Laiou, A. *Constantinople and the Latins: The Foreign Policy of Andronicus II, 1282–1328.* Cambridge, Mass., 1972.
- . “Contribution à l’étude d l’institution familiale en Epire au XIIIe siècle.” *FM* 6 (1984): 275–323. Reprinted in *Gender, Society and Economic Life in Byzantium.* Aldershot, 1992.
- . “The Economy of Byzantine Macedonia in the Palaiologan Period.” In press.
- . *Gender, Society and Economic Life in Byzantium.* Aldershot, 1992.
- . “Η Θεσσαλονίκη, η ενδοχώρα της και ο οικονομικός της χώρος στην εποχή των Παλαιολόγων.” *Βυζαντινή Μακεδονία, 324–1430* (Thessalonike, 1995).
- . “In the Medieval Balkans: Economic Pressures and Conflicts in the Fourteenth Century.” In *Byzantine Studies in Honor of Milton V. Anastos*, ed. S. Vryonis, Jr. Malibu, Calif., 1985. Reprinted in *Gender, Society and Economic Life in Byzantium.* Aldershot, 1992.
- . “Κοινωνικές δυνάμεις στις Σέρρες στό 14ο αιώνα.” In *Οι Σέρρες και η περιοχή τους από την αρχαία στη μεταβυζαντινή κοινωνία.* Serres, 1998.
- . *Mariage, amour, et parenté à Byzance aux XIe–XIIIe siècles.* Paris, 1992.
- Laiou-Thomadakis, A. *Peasant Society in the Late Byzantine Empire: A Social and Demographic Study.* Princeton, N.J., 1977.
- Laiou, A., and D. Simon. “Eine Geschichte von Mühlen und Mönchen: Der Fall der Mühlen von Chantax.” *Bollettino dell’ Istituto di Diritto Romano*, 3d ser., 30 (1992): 619–76.
- Lefort, J. “Une exploitation de taille moyenne au XIIIe siècle en Chalcidique.” In *Ἀφιέρωμα στόν Νίκο Σβορώνο.* Rethymnon, 1986.
- . “Fiscalité médiévale et informatique: Recherche sur les barèmes pour l’imposition des paysans byzantins au XIVe siècle.” *RH* 252 (1974): 315–56.
- . *Paysages de Macédoine.* Paris, 1986.
- . “Population et peuplement en Macédoine orientale, IXe–XVe siècles.” In *Hommes et richesses dans l’Empire byzantin.* Vol. 2. Paris, 1991.
- . “Radolibos: Population et paysage.” *TM* 9 (1985): 195–234.
- . “Rural Economy and Social Relations in the Countryside.” *DOP* 47 (1993): 101–13.
- . “Tableau de la Bithynie au XIIIe siècle.” In *The Ottoman Emirate, 1300–1389*, ed. E. Zachariadou. Rethymnon, 1993.

- . *Villages de Macédoine*. Vol. 1, *La Chalcidique occidentale*. Paris, 1982.
- Lefort, J., and J.-M. Martin, “L’organisation de l’espace rural: Macédoine et Italie du Sud (Xe–XIIIe siècle).” In *Hommes et richesses dans l’Empire byzantin*. Vol. 2. (Paris, 1991).
- Lemerle, P. *Cinq études sur le XIe siècle byzantin*. Paris, 1977.
- . “Une province byzantine: Le Péloponnèse.” *Byzantion* 21 (1951): 341–54.
- Mansolas, A. *Απογραφικά πληροφορία περί γεωργίας κατά τὸ ἔτος 1875*. Athens, 1876.
- Matschke, K.-P. *Die Schlacht bei Ankara und das Schicksal von Byzanz*. Weimar, 1981.
- Medvedev, I. *Mistra: Ocherki istorii i kul'tury pozdnevizantiiskogo goroda*. Leningrad, 1973.
- Metropolitan, G. N. “Φορολογικὸ καὶ γαιοκτητικὸ καθεστῶς τῆς ἐλαιοκαλλιέργειας στὸ Ἑλληνικὸ κράτος (1821–1860).” *Ἱστορικά* 20 (1994): 71–102.
- Morrisson, C. “La dévaluation de la monnaie byzantine au XIe siècle.” *TM* 6 (1976): 3–47.
- Nesbitt, J. W. “Mechanisms of Agricultural Production on Estates of the Byzantine Praktika.” University of Wisconsin, Ph.D. dissertation, 1972.
- Oikonomides, N. *Fiscalité et exemption fiscale à Byzance, IXe–XIe s.* Athens, 1996.
- . “Monastères et moines lors de la conquête ottomane.” *SüdostF* 35 (1976): 1–10.
- . “Notes sur un *praktikon* de pronοιαire (juin 1323).” *TM* 5 (1973): 335–56.
- . “Ottoman Influence on Late Byzantine Fiscal Practice.” *SüdostF* 45 (1986): 1–24.
- . “Terres du fisc et revenu de la terre aux Xe–XIe siècles.” In *Hommes et richesses dans l’Empire byzantin*. Vol. 2. Paris, 1991.
- Ostrogorskij, G. *Pour l’histoire de la féodalité byzantine*. Brussels, 1954.
- . *Quelques problèmes d’histoire de la paysannerie byzantine*. Brussels, 1956.
- Oxford Dictionary of Byzantium*, ed. A. Kazhdan et al., 3 vols. Oxford, 1991.
- Panagiotopoulos, V. *Πληθυσμὸς καὶ οἰκισμοὶ τῆς Πελοποννήσου 13ος–18ος αἰώνας*. Athens, 1987.
- Pazaras, T., and A. Tsanana. *Τὸ αρχαιολογικὸ ἔργο στὴ Μακεδονία καὶ Θράκη*. 1995.
- Reid, J. D., Jr. “Sharecropping and Agricultural Uncertainty.” *Economic Development and Cultural Change* 24 (1976): 549–76.
- Richard, J. “Le Casal de Psimolofos et la vie rurale en Chypre au XIVe siècle.” *Mélanges d’archéologie et d’histoire* 59 (1947): 132–33. Reprinted in *Les relations entre l’Orient et l’Occident au Moyen Age: Etudes et documents*. London, 1977.
- Schilbach, E. *Byzantinische Metrologie*. Munich, 1970.
- Schreiner, P. “Die Produkte der byzantinischen Landwirtschaft nach den Quellen des 13.–15. Jh.” *BHR* 10 (1982): 88–95.
- Sokolov, I. “Krupnye i melkie vlasteli v Fessalii epokhi Paleologov.” *VizVrem* 24 (1923–26): 35–44.
- Stiglitz, J. E. “Incentives and Risk Sharing in Sharecropping.” *Review of Economic Studies* 41 (1974): 219–55.
- Svoronos, N. “Le domaine de Lavra sous les Paléologues.” In *Actes de Lavra*, ed. P. Lemerle, A. Guillou, N. Svoronos, and D. Papachryssanthou. Vol. 4. Paris, 1982.
- . *Recherches sur le cadastre byzantin et la fiscalité aux XIe et XIIe siècles: Le cadastre de Thèbes*. Paris, 1959.

- Topping, P. "Le régime agraire dans le Péloponnèse latin au XIVe siècle." *L'Hellénisme contemporain*, ser. 2, 10 (1956): 255–95.
- Zachariadou, E. A. "Notes sur la population de l'Asie Mineure turque au XIVe siècle." *ByzF* 12 (1987): 223–31.
- . "Παραγωγή και εμπόριο στο δεσποτάτο της Ηπείρου." In Πρακτικά Διεθνούς Συμποσίου για τό Δεσποτάτο της Ηπείρου, ed. E. Chrysos. Arta, 1992, 87–93.
- . "Prix et marchés des céréales en Romanie (1343–1405)." *Nuova rivista storica* 61 (1977): 291–306.
- Zakythinis, D. A. *Le despotat grec de Morée*. Vol. 2, *Vie et institutions*. Athens, 1953. Ed. and rev., C. Maltéizou. 2 vols. London, 1975.
- Zografos, D. A. *Ίστορία της Έλληνικης Γεωργίας*. 3 vols. Athens, 1921–24. Reprint, Athens, 1976, in 2 vols.