

**Early Modern Reforestation:
The Case of the Ottoman Western Balkans**

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B.A., Simon Fraser University, 2007

Thesis Submitted in Partial Fulfillment of the
Requirements for the Degree of
Master of Arts

in the
Department of History
Faculty of Arts and Social Sciences

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SIMON FRASER UNIVERSITY
Fall 2017

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Abstract

The scholarship has shown that humans were depleting early-modern forests globally. This study examines the case of the Ottoman Western Balkans, where forests were able to regrow in the seventeenth and eighteenth centuries despite the Porte's intention, as evidenced by the political centre's leading economic ideas, policies and actions, to foster demographic and agricultural growth at the expense of forests. While limited timber extraction supported the local demands of urbanization, industry, and militarization, the main trend was the one of reforestation. The trend is described by contemporary observers of these forests, and is indicated by regional reductions in rural life security, the growth of pastoralism at the expense of agriculture, the relative geographical isolation of the region from major trade routes, and by the variable climate of the Little Ice Age. Istanbul's political elites failed to create social conditions conducive to demographic growth, agricultural expansion, and forest exploitation.

Keywords: Ottoman Empire; Western Balkans; forest; agriculture; pastoralism; wood

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Introduction

John F. Richards' *The Unending Frontier*, arguably the strongest historiographical narrative¹ concerned with early-modern nature,² sees global forests as environments that were losing ground to increasingly sophisticated and consolidating states and state-like organizations.³ While frontier settlement, scientific sophistication, proliferating energy needs, natural resource commodification, and monetization as well as globalization of trade placed great pressures on forest biomass and diversity, possibly the greatest of these pressures stemmed from global demographic and agricultural expansions.⁴

This global view of early-modern deforestation, however, cannot and does not perfectly match historic realities across all world localities. Some early-modern forests were, if not thriving, certainly re-growing. One example of forest regeneration is to be found in the forests of the New World, which grew both in extent and density between 1492 and 1750 due to the sweeping depopulation of indigenous peoples. In addition, Tokugawa Japan is an example of a state which recognized its lack of sustainability and henceforth instituted policies which effectively "halted deforestation"⁵ in its domains. Another important instance of early-modern forest expansion can be seen in the Ottoman parts of the western Balkan Peninsula. While global and environmental English-speaking historians have invested great efforts in analyzing histories of forest

1 For another treatment of global environmental history that is consistent with Richards' views see Michael Williams, *Deforesting the Earth: From Prehistory to Global Crisis* (Chicago and London: The University of Chicago Press, 2003). Another agreeing, but slightly more assertive, argument is to be found in James C. Scott, *Seeing Like a State: How Certain Schemes to Improve Human Condition Have Failed* (New Haven and London: Yale University Press, 1998). For a discussion of relationships between nature and accumulation of power see Joachim Radkau, "Nature and Power: An Intimate and Ambiguous Connection," *Social Science History* 37 (Fall 2013): 325-345.

2 I will use words 'nature' and 'environment' interchangeably throughout this study. Both terms denote the world as constructed by human labour and other biogeoclimatic processes.

3 John F. Richards, *The Unending Frontier: An Environmental History of the Early Modern World* (Berkeley and Los Angeles: University of California Press, 2003), 17-24. The Dutch East India Company is an example of a state-like organization that reduced forest cover through its involvement in sugar production, processing and trade. See John F. Richards, *The Unending Frontier*, 90 and 392.

4 Michael Williams, *Deforesting the Earth*, 147 and 155-160.

5 John F. Richards, *The Unending Frontier*, 89.

regrowth in North America and Japan, the case of the western Ottoman Balkans has received minimal scholarly attention. It is the goal of this study to change this.

The Western Balkans

The "western Ottoman Balkans," our region of interest, roughly signifies the intersection of the Ottoman Empire and the region occupied by contemporary central and southern Serbia, Bosnia and Herzegovina, eastern Croatia, Kosovo, northern Macedonia, northern Montenegro and northern Albania. For the ease of narrative, from here on I will use only the phrase "Western Balkans" to represent the entire region.

The Western Balkans is dominated by three major mountain ranges.⁶ The Dinaric range extends from Slovenia over Bosnia and Hercegovina to Montenegro, Macedonia and Albania. These mountains transition into hills from Montenegro, across Šumadija and towards Belgrade. The Morava valley, the valley running from the Danubian plain to the city of Niš, is surrounded by the Rhodope range mountains on the west side and the Rhodope and the Balkan range mountains on the east side. Parts of the Rhodope and Dinaric ranges also stretch into Macedonia. Generally speaking, low and medium elevations are dominated by oak (*Quercus* spp.) and beech (*Fagus* spp.) forests, while higher elevations are dominated by Norway spruce (*Picea abies*), fir (*Abies* spp.), and black pine (*Pinus nigra*).⁷

The best agricultural land in the Ottoman Western Balkans was located in the valleys of larger rivers such as the Danube, Sava, Morava, and Vardar as well as in the Kosovo valley and the edges of the great plain that today lies in northern Serbia, eastern Croatia and southern Hungary.⁸ Regional hills, while not considered to be prime

6 Fikret Adanir, "The Ottoman Peasantries, c. 1360-c.1860," in *The Peasantries of Europe: From the Fourteenth to the Eighteenth Centuries*, ed. Tom Scott (Longman: London and New York, 1998), 272-3.

7 Pál Jakucs, "Vegetational Conditions in the Danube Area," *Geoforum* 2 (2) (1971): 49-55.

8 The plain is a part of the greater Pannonian Basin. The Ottoman section of the Basin proper is not included in my definition of the Western Balkans. Ecological narrative in that case is the one of wetland creation and, to some extent, soil degradation. See Lajos Rácz, trans. by Alan Campbell, *The Steppe to Europe: An Environmental History of Hungary in the Traditional Age* (Cambridge: White Horse Press, 2013), 151 and 182.

agricultural land, could still be successfully cultivated. The climate of the Western Balkans is continental, with cold winters and hot, humid, summers.

The Argument and Historiography

The forests of the Western Balkans regenerated because the Ottoman state⁹ in the period between the early seventeenth century and the late eighteenth century failed to summon the strength to make use of forested land. The Ottoman Empire's inability to dominate forests went hand-in-hand with its destabilization. The Ottoman mission of self-strengthening through decentralization had its political and military successes, but these successes did not improve the state's ability to utilize the forest resource. Until the mid-sixteenth century the Ottomans appear to have been part of the global deforestation trajectory as described by scholars such as Richards.¹⁰ However, with the turn of the century economic and administrative issues¹¹ as well as climatic and geographical factors prevented the Ottoman state—or rather, the leading political households in Istanbul—from fully projecting power and a measure of social stability¹² into the Western Balkans and its forests.¹³ This is not to say that forests were not used at all. Limited

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- 9 Throughout this project, notions such as the (Ottoman) 'state' or 'empire' will be used interchangeably with the Porte or Istanbul. When I talk about the state or empire I mostly refer to the sultan and the leading families in Istanbul. For a more detailed explanation, see the next section.
- 10 This would be indicated by demographic and economic expansion that we see in the Empire in this period. The sixteenth century especially, up until the 1590s, was a time of demographic and corresponding agricultural expansion in the Western Balkans. See Jelena Mrgić, *Severna Bosna: 13.-16. vek*, 200. and Fikret Adanir, "Tradition and Rural Change in Southeastern Europe During Ottoman Rule," 140. Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914* (Cambridge, New York: Cambridge University Press, 1994), 159.
- 11 The largest obstacles included corruption-caused rural depredation, the Little Ice Age, a general perception that the sultan was powerless to uphold justice and an expensive series of conflicts with the Safavid, Habsburg and Russian states. See respectively K. Kivanc Karaman and Şevket Pamuk, "Ottoman State Finances in European Perspective, 1500–1914," 594-5. and Frederick F. Anscombe, "The Balkan Revolutionary Age," *The Journal of Modern History*, 84 (September 2012): 585. and Wolf-Dieter Hütteroth, "Ecology of the Ottoman Lands" in *The Cambridge History of Turkey Vol. 3: The Later Ottoman Empire, 1603–1839*, ed. Suraiya Faroqhi (Cambridge and New York: Cambridge University Press, 2006), 32.
- 12 Social stability includes general conditions for economic well-being, such as peace, the state's monopoly over violence, and the rule of law.
- 13 While I understand that it is historiographically controversial to associate failure with the Ottoman state of this period, I do agree with Sam White's insistence that the crisis the state was in has to be explained without diminishing Ottoman successes of the sixteenth century.

forest use of local character took place in proportion to regional demographic patterns and densities.¹⁴ However, it was the absence of organized, large-scale and state-supported initiatives that brought about a revitalization of treed landscapes in the Western Balkans.¹⁵ There are very few scholarly works on this topic.

Two relatively recent contributions to the field of Ottoman environmental history, Alan Mikhail's *Nature and Empire in Ottoman Egypt* and Sam White's *Climate of Rebellion in the Early Modern Ottoman Empire*, offer distinct perspectives on the state of Ottoman forests. Mikhail argues that Anatolian timber extraction lay at the centre of the struggle between Istanbul and Egypt, as well as that Egyptian agricultural sustainability declined as Egypt came closer and closer to becoming a nation-state (1805).¹⁶ For this reason, Mikhail views Ottoman use of natural resources as more environmentally friendly. My study will show that the Ottoman centre had the intention of aggressively exploiting and, perhaps, managing timber resources, but, at least in the seventeenth- and eighteenth-century Western Balkans, internal economic issues and administrative conflicts prevented this from happening. In fact, Istanbul's loss of control over Egypt and

My project includes the idea of failure only because it is apparent that the natural resource management goals set by the state itself were not being met. See Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire* (Cambridge and New York: Cambridge University Press, 2011), 4.

- 14 Simeunović states that the Ottoman forest use was of a "local character," "temporary," and "spatially limited." See Dušan S. Simeunović, *Uzroci Nestajanja Šuma u Srbiji u XIX Veku* (Beograd: Univerzitet u Beogradu, 1957), 40. In Bosnia, tree extraction associated with the river Miljacka in the vicinity of Sarajevo is an example of this sort of forest use.
- 15 The Empire's large-scale forest-depleting initiatives in the Western Balkans prior to the seventeenth century include mining for gold, silver and copper as well as a system of tax incentives that increased agricultural production and supported demographic expansion of the sixteenth century. Regional mining production declined in the seventeenth and (especially) eighteenth centuries. For information on the declining productivity of Ottoman mines in the Western Balkans see Srdjan Katić, *Rudnik Majdanpek: XVI-XVIII Vek* (Majdanpek: Muzej u Majdanpeku, 2009), 5. and Şevket Pamuk, *A Monetary History of the Ottoman Empire* (New York: Cambridge University Press, 2000), 165. Larger forest-depleting successes were to be seen in Anatolia, where the Ottoman state's ability to control forests was greater. See the following footnote.
- 16 Timber was crucial to the maintenance of Egyptian irrigation infrastructure. Since Egypt was more arid than Anatolia, Egyptian tree resources were not as renewable (i.e. sustainable) as Anatolian. See Alan Mikhail, *Nature and Empire in Ottoman Egypt: An Environmental History* (Cambridge and New York: Cambridge University Press, 2011), 27, 125 and 145.

its agricultural surplus during the “long” eighteenth century appears to be a result of similar economic and administrative obstacles.¹⁷

White, on the other hand, argues that the Ottoman Empire “suffered a clear and dramatic climate-led catastrophe”¹⁸ during the Little Ice Age,¹⁹ a catastrophe which “nearly brought down the Empire.”²⁰ The Empire's dependence on the cultivation of marginal and unproductive land, according to White, left the Ottoman populace hungry for food and political change once the wave of harsh climatic conditions made that land useless. Climate is indeed an important factor in history and as such will be acknowledged in this study. Changes in climate can affect soils and vegetation directly, or indirectly by affecting human society and its use of natural resources. Ottoman history itself, however, argues against the notion that White comes very close to adopting, that is, the notion of climatic determinism in relation to peasants' livelihoods and political affiliations. Just as forests can be resilient in the face of environmental change, so can humans. Ottoman peasants in what is today Serbia and Bosnia minimized the effects of the Little Ice Age through migrations, intensified pig rearing, sowing of cold-hardy grains, selection of appropriate sowing and harvest dates as well as through transition from grape and wine production to plum and *rakia* production.²¹ Nevertheless, White's thesis is central when it comes to understanding the social, economic, and environmental makeup of the seventeenth-and-eighteenth-century Ottoman Empire.

17 Mikhail suggests that first serious challenges to Istanbul's authority in the Egyptian context emerged as early as the late seventeenth century after which the Ottoman Empire centralized its authority in Egypt. Istanbul's strategy, however, failed because Egyptian peasants retaliated by abandoning their fields. Subsequent, and this time insurmountable, challenges came from Muhammad Ali Pasha who in the early nineteenth century nationalized private land and waged a war (1831-3) against the sultan. See Alan Mikhail, *Nature and Empire in Ottoman Egypt*, 3-4, 75, 171. Also see K. Kivanc Karaman and Şevket Pamuk, “Ottoman State Finances in European Perspective, 1500–1914,” *The Journal of Economic History* 70 (September 2010): 594-5.

18 Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 14.

19 The Little Ice Age lasted approximately from the beginning of the sixteenth century to the mid-nineteenth century. See K. McCarney-Castle, G. Voulgaris, A.J. Kettner and L. Giosan, “Simulating Fluvial Fluxes in the Danube Watershed: The ‘Little Ice Age’ versus Modern Day,” *The Holocene* 22, no. 1 (2012): 94.

20 Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 1.

21 *Rakia* is a fruit-derived alcoholic beverage. Jelena Mrgić, “Wine or Raki - The Interplay of Climate and Society in Early Modern Ottoman Bosnia,” *Environment and History* 17 (2011): 613-637.

While not directly focused on forests or the Western Balkans, Faisal Husain's recent study of the ways in which marshlands around Baghdad mediated power relationships between the Ottoman Empire and the Khaza'il tribal confederation in the eighteenth and the early nineteenth centuries is still highly relevant to our discussion. Husain noticed that the Porte²² was antagonistic to the Euphrates' marshlands in a similar way in which I argue the Porte was antagonistic to forests in the Western Balkans. The marshlands, we learn, jeopardized imperial agricultural revenues and provided protection to the Empire's political challengers, the Khaza'il.²³ The Porte, in this case, summoned the strength to defeat the Khaza'il in the eighteenth century by changing the regional hydrological regime.²⁴ There are striking similarities between Husain's analyses of eco-political relationships between the Empire, marshlands and the Khaza'il around Baghdad, and my analyses of relationships between the Empire, forests and brigands in the Western Balkans. Husain's study also correctly reveals that the Porte held distinct ecological (i.e. agricultural) preferences for its territories.²⁵

Solid historiographical roots for this study are to be found in Jelena Mrgić's contributions to the environmental history of Bosnia and Serbia, Joel Martin Halpern's essay on ecological transformations in central Serbia in the nineteenth century and Traian Stoianovich's essay²⁶ on an energetic presence of Orthodox Christian livestock merchants in the Ottoman Empire in the seventeenth and especially eighteenth centuries. Halpern and Stoianovich emphasize the relevance of forests to the prosperity of regional merchants and Halpern even outlines the pre-nineteenth-century history of a

22 The Porte, in this case, is represented by individuals such as the "Lord of Water and Mud" Sultan Mustafa II (1695-1703), his grand vizier, Hasan Pasha (the Porte-appointed governor in Baghdad, 1704-1724) and Buyuk Süleyman Pasha (the Porte-appointed governor of Iraq, 1780-1802).

23 Faisal Husain, "In the Bellies of the Marshes: Water and Power in the Countryside of Ottoman Baghdad," *Environmental History* 19 (October 2014): 645-6 and 653.

24 *Ibid.*, 651.

25 The agricultural ecological preference is also revealed in Mikhail's assessment of Egyptian agriculture and Anatolian forests. He argues that "the Ottoman state deemed certain natural environments more important than others" and concludes that "Egypt, a place of great agricultural potential, was clearly, from both an Ottoman and a local Egyptian perspective, worth the alteration and consumption of other natural landscapes to provide the Nile Valley with the materials needed to take advantage of its rich soils, plentiful waters, and large labouring population." See Alan Mikhail, *Nature and Empire in Ottoman Egypt*, 159.

26 Traian Stoianovich, "The Conquering Balkan Orthodox Merchant," *The Journal of Economic History* 20 (June 1960): 234-313.

regional forest.²⁷ Mrgić's main body of work²⁸ focuses on Bosnian and Serbian histories of the late medieval and early Ottoman periods while remaining exceptionally sensitive to anthropogenic impact on forests and the wider environment. She also places great emphasis on the continuity in the regional populace's technological relationship with the environment between the medieval period and the early 1800s.²⁹ Mrgić's emphasis on the Western Balkans' extended medieval period gives us grounds to evaluate the extent of the Ottoman state's ability to invest into or encourage agricultural expansion. Even though my area of interest is slightly larger than Halpern's or Mrgić's, their work is an invaluable starting point for research into forests of the Western Balkans.

The Ottoman Empire

The Ottoman Empire was an agrarian empire whose rulers frequently sought to direct "a particular flow of resources and population."³⁰ The Porte (i.e. the sultan, the Divan, chief eunuchs, imperial scribes and the most prominent vizier households) was concerned with both the distribution and production of key resources such as grain, timber and meat. While agricultural production was one of Istanbul's topmost concerns, the Porte, unlike a modern state, could not take "direct control of most agriculture or industry."³¹ This is why the Ottoman state had to rely on a comprehensive network³² of

27 Joel Halpern, "The Ecological Transformation of a Resettled Area, Pig Herders to Settled Farmers in Central Serbia (Šumadija, Yugoslavia) during the 19th and 20th Centuries," in *Transhuman Pastoralism in Southern Europe: Recent Perspectives from Archaeology, History and Ethnology*, ed. László Bartosiewicz and Haskel J. Greenfield (Budapest: Archaeolingua, 1999), 81-83.

28 For readers' benefit I will convert all footnoted Cyrillic script titles into the Latin script.

29 Jelena Mrgić, "Srednjovekovni čovek i priroda" in *Privatni Život u Srpskim Zemljama Srednjeg Veka*, ed. Smilja Marjanović-Dušanović and Danica Popović (Belgrade: Clio, 2004), 165.

30 Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 17.

31 Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 22.

32 In fact, in our period the state became much more decentralized. In Tezcan's words: "if the political structures of the...patrimonial empire could be represented by a pyramid at the apex of which stood the sultan, the Second Empire [or in other words the Empire as it existed between 1580s and 1826] would best be symbolized by a spider web with the monarch at the centre." See Baki Tezcan, *The Second Ottoman Empire: Political and Social Transformation in the Early Modern World* (Cambridge University Press: Cambridge and New York, 2010), 193.

provincial officials who “tried to ensure that settlement extended as far as possible and agriculture produced as much food as possible.”³³

Given the diffuseness of the Porte's preference for agricultural production and demographic stability or growth, it would not be useful to our project to clearly differentiate between a provincial administrator's drive to bolster agricultural production and the corresponding tendency stemming from the Porte. Generally speaking, the two are likely to share the same logic and economic benefits of imperial resource management. My research, in any case, has not revealed more than one discourse of agricultural expansion among the Ottoman elite.

The decentralization of the Empire that we see in our period might have politically strengthened the state by increasing the number of imperial stakeholders (e.g. Janissaries and *ayans*³⁴), but there is no evidence that this “proto-democratization”³⁵ improved the lives and agricultural performance of Ottoman peasants in the Western Balkans. In fact, the new stakeholders were, in many cases, a source of oppression and insecurity for the Ottoman peasantry (i.e. *re'aya*).

Furthermore, with the rise of *ayans* in the seventeenth and eighteenth centuries,³⁶ the Porte faced considerable difficulties in convincing some of its provincial officials to adopt the imperial vision of agricultural expansion and justice for the peasantry.³⁷ Tolga Esmer's study of the Ottoman bandit Kara Feyzi is helpful here because it reveals the dominant power dynamic of the late-eighteenth-century Western Balkans. Even though the interests of the Porte, provincial officials and bandits

33 Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 23.

34 *Ayans* were local notables whose role was to perform various administrative and military duties.

35 Baki Tezcan, *The Second Ottoman Empire: Political and Social Transformation in the Early Modern World* (Cambridge University Press: Cambridge and New York, 2010), 197.

36 *Ayans'* influence was legitimized by the state earlier in what is today Macedonia (around 1650). The *sancak* of Bosnia underwent this process more gradually and somewhat later, between the years 1683 and 1730. See Avdo Sućeska, *Ajani: Prilog Izučavanju Lokalne Vlasti u Našim Zemljama za Vrijeme Turaka* (Sarajevo: Naučno Društvo SR Bosne i Hercegovine, 1965), 183.

37 The Porte's expansion of the tax-farm system meant that the state, contrary to its intentions, was effectively enriching and supporting not individuals who grew economy and agricultural activity, but individuals who were able to generate cash, regardless of the method by which this cash was obtained. This system created an incentive for many tax-farmers to choose the path of the least resistance, which was the path of peasant oppression.

seemingly clashed, boundaries between these social groups were quite porous. Someone who in peacetime might appear to Istanbul a ruthless bandit would in a time of war turn into an “indispensable” resource.³⁸ A provincial administrator might also temporarily side with bandits in order to obtain a promotion or additional material support from the Porte.³⁹ Esmer concludes that these trends illustrate the “blurring of lines between military, state and society” as well as between “state violence and private...violence.”⁴⁰ The Porte's lack of monopoly over violence⁴¹ and an absence of popular perception of the Porte as the sole dispenser of justice⁴² imply that it was easy for a relatively powerful Ottoman subject to challenge and override the Porte's agricultural and demographic ideals. On the other hand, when it came to the general Ottoman populace, they often could not see “much difference between the 'rebel' and the legitimate authority in terms of oppression.”⁴³

Method

Generally speaking, environmental history can be divided into a number of sub-fields: material, political, intellectual, climate, disease and paleoscience.⁴⁴ The first five categories refer in one way or another to humans, while the last category might not be interested in the human world at all.

The current study can be placed in the categories of material and political environmental history. It is concerned with relationships between human society, forests

38 Kara Feyzi became an *ayan* in 1805. See Tolga Esmer, “Economies of Violence, Banditry and Governance in the Ottoman Empire Around 1800,” *Past and Present* 224 (2014): 195.

39 Tolga Esmer, “Economies of Violence, Banditry and Governance in the Ottoman Empire Around 1800,” 186.

40 Tolga Esmer, “Economies of Violence, Banditry and Governance in the Ottoman Empire Around 1800,” 194

41 Tolga Esmer, “Economies of Violence, Banditry and Governance in the Ottoman Empire Around 1800,” 194.

42 Esmer states that the “state was not the moral center of society.” The Empire's justice system had to compete with “local systems of vengeance and grass-roots conceptions of justice.” See Tolga Esmer, “Economies of Violence, Banditry and Governance in the Ottoman Empire Around 1800,” 195.

43 Tezcan makes this comment in relation to a different Ottoman region, but the comment is equally valid in the case of the Western Balkans. See Baki Tezcan, *The Second Ottoman Empire: Political and Social Transformation in the Early Modern World* (Cambridge University Press: Cambridge and New York, 2010), 147.

44 J.R. McNeill, “The Nature of Environmental History,” *History and Theory* 42 (December 2003): 6-11.

and timber.⁴⁵ We do not have exact records of forest size and distribution for the early-modern period, but instead have to rely on contemporary reports and on our knowledge of land-use and the socio-economic conditions of a given region. We have to examine sources containing observations of particular forested regions or sources related to anthropogenic factors that invariably had to affect the forests of the Western Balkans: agriculture, pastoralism, mining, salt extraction, saltpeter production, migration, charcoal making, heating, ship building, roads and brigandage. Economic, political and demographic histories of the Ottoman Empire⁴⁶ provide context for these primary sources.

In this study, the level of intensity of such economic activities serves as a measure of forest-use. For example, expanding agricultural or mining activity is an indicator of an expanded forest use. Diminishing agricultural or mining activity, on the other hand, if it persists for twenty years or more, is in many instances suggestive of forest regrowth. Twenty years of growth on abandoned agricultural land or pastureland would allow pioneer⁴⁷ trees such as *Quercus robur* and *Fagus sylvatica* to reach at least five meters in height,⁴⁸ the tree height which indicates the land's transition into forest.⁴⁹

45 On the other hand, intellectual, climate, disease and paleoscience historical perspectives cannot be ignored either. An intellectual perspective, while placing an emphasis on the history of ideas, will be useful in making connections between Ottoman economics, state building and land use. Similarly, a consideration of malaria will improve our understanding of how numerous peasants in the region abandoned agriculture for pastoralism. The influence of fire regimes on forests have been derived from climate and paleoscience studies. That many historical interpretive frameworks can be used in this study should not be surprising. Humans are a part of nature and nature is a part of humans. All historical perspectives are by necessity also environmental.

46 For example: Şevket Pamuk, *A Monetary History of the Ottoman Empire* (New York: Cambridge University Press, 2000). and Halil İnalcık and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914* (Cambridge, New York: Cambridge University Press, 1994). and Linda Darling, *Revenue-Raising and Legitimacy: Tax Collection and Finance Administration in the Ottoman Empire, 1560-1660* (Leiden: E. J. Brill, 1996).

47 Pioneer trees are the first to colonize a previously disturbed ecosystem and initiate a new wave of ecological succession. Agricultural activity, in this sense, is a form of disturbance.

48 David Moore and John White, *Illustrated Trees of Britain and Northern Europe* (London: Domino Books, 2003), 337 and 383.

49 I borrowed the five-meter height criterion from the definition of a forest that was used by Food and Agriculture Organization of the United Nations. The organization's two other criteria for defining a forest, namely that the forestland spans more than 0.5 ha and that the canopy cover is more than 10%, would be difficult to test for using historical methods. This is not to say that the two criteria will be entirely ignored. Their treatment in the second chapter of the study will be unsystematic and implicit. See Annex 2 of "Global Forest Resources Assessment 2005:

Moreover, land-use changes are much more significant indicators of intensity of forest depletion (or regrowth) than instances of wood-use. Whereas a clear-cut, generally speaking, allows a stand of trees to regrow, a change in land-use – for example, from forest to vineyard – signifies a more persistent reduction of forest cover. For this reason, this study is primarily concerned with tracking regional forest-related land-use changes. Demographic shifts are the next-topmost concern because they indirectly indicate the number of people that might be available to occupy and cultivate land. Demographic shifts are also indirect indicators of the intensity of wood-use in the broadest sense (i.e. wood as fuel or building material).

Travel accounts, imperial histories and chronicles contribute finer detail to forests as portrayed by demographic and economic trends of the Western Balkans. Travellers' descriptions of forests are not always reliable since each account is more akin to a comparison between the observed stand of trees and the traveller's previous memories or experience of forests. This study considers a first-hand description of a forest only if one of these conditions are met:

- 1) the author was comparing two forests within the Western Balkans, or
- 2) the author was born or lived in the Western Balkans, or
- 3) the author merely made observations of relationships between humans activities and regional trees, or
- 4) the author's country of origin and past travelling experience indicate that he or she has seen similar (i.e. large) forests elsewhere.

These four conditions ensure that the degree to which travellers suggest that a land area is covered by trees is not exaggerated.

One regretful aspect of this study is that it is not able to analyze direct voices of Ottoman peasants, the unlettered people who, at least in Bosnia, made up between 80% and 90% of the total population⁵⁰ and whose labour and duty were rooted in environmental transformation. To reconstruct the world of Ottoman peasants we have to

Progress towards sustainable forest management," accessed May 20, 2014, <http://www.fao.org/docrep/008/a0400e/a0400e00.htm>.
50 Jelena Mrgić, *Severna Bosna: 13.-16. vek* (Belgrade: Istorijski Institut, 2008), 274.

rely on critical reading of textual sources composed by Ottoman elites⁵¹ who had significant contact with the peasantry through tax registration, tax collection, legal matters, trade and corvée.

Another methodological drawback of the project is that its author cannot read all major languages spoken in the region. While I can read languages of former Yugoslavia (Serbian, Croatian, Bosnian, Montenegrin and, to an extent, Macedonian) and some German, I had to rely on translations of sources written in Albanian, Arabic or Ottoman Turkish. While this is not ideal, at least the translations I used are relevant to my thesis and prepared by erudite specialists. I also recognize that translators' choices of what source to work on might be influenced by regional allegiances or nationalistic, religious and economic worldviews. If these allegiances and worldviews turn out to inflate the provincial or deflate Istanbul's politico-economic agency, my hope is that Turkish-speaking historians, whose English-language publications I plan to consult extensively, will help correct the discursive imbalance.

The Argument, Branching Out

The study contains three main chapters. Firstly, we have to demonstrate that the Porte had a long-lasting intention to project a measure of control over forests in the Western Balkans. Secondly, we will show that forests in the region were being revitalized in the seventeenth and eighteenth centuries. This would indicate that the Empire was not able to fully implement its policies and fulfill its intentions in relation to forested land. The third chapter will describe where in the Western Balkans forests continued to be depleted despite the general trend.

51 The elites include statesmen, judges, administrators, religious leaders, travellers, merchants and military men.

Chapter 1. Deforestation as an Ideal

The Ottoman state had strong interests in, and intention to exercise control over, forested land in the Western Balkans. Dominant economic ideas as well as imperial laws, policies and actions were in favour of demographic and agricultural expansion, which would translate into forest depletion.

Ottoman Economic Thought

Ottoman economic ideas focused on ensuring that production surpluses be monetized, cities well-provisioned and tax revenues increased. By way of agricultural and demographic growth, forests were embedded⁵² in the Ottoman economic worldview, a system of thought that held sway at least until the end of the eighteenth century.⁵³ To further contextualize the thoughts of Ottoman economic thinkers in our period I will also refer to the thoughts of their intellectual predecessors, who wrote in the sixteenth and fifteenth centuries. This section will illustrate that Ottoman economic thought gave special prominence to agricultural and demographic growth.

Agricultural growth generated through just relationships between the state and the peasantry, according to classical economic thought, was an essential prerequisite for increasing state revenues and building a strong empire. Na'ima (1655-1716), an accountant, historian and economic commentator, believed that *re'aya*, tax-paying subjects primarily composed of the peasantry, and the wealth they produced were two of

52 These economic attitudes suggest that the prosperity of the empire rested not only on the army, justice and leadership of the sultan and his bureaucracy, but also on availability of coin, domestic manufacturing, high population numbers, growing agriculture, trade and mining. The last four of these can be closely linked to forest-use.

53 Fatih Emriş, *A History of Ottoman Economic Thought*, 196. For example, we can see the endurance of the Ottoman classical economic thought in the writings of Halil Rifat Pasha (1820-1901) who was an Ottoman statesman and a grand vizier. See *Ibid.*, 125. Bruce McGowan also suggest that the Ottoman classical economic thought was “slow to erode” and that the Ottomans did not embrace free trade liberalism until the 1820s. See Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 762-3. For many sixteenth- and seventeenth-century examples of Ottoman thinkers who subscribed to classical economic ideas see Linda Darling, *Revenue-Raising and Legitimacy: Tax Collection and Finance Administration in the Ottoman Empire, 1560-1660*, 286-9.

the four main pillars of the Empire.⁵⁴ The *re'aya's* role, in his view, was to “provide the state treasury...with money”⁵⁵ and ensure “solid finances.”⁵⁶ Ibn Khaldun (1332-1406), whom Na'ima often quoted in his works, strongly linked tax revenues and property acquisition to agriculture and the peasants' willingness to stay on the land.⁵⁷ Agriculture, Ibn Khaldun believed, “stands before all other” occupations because of its simplicity and naturalness.⁵⁸ Kinalizade (1510-1572), a moral philosopher and judge, while subscribing to the idea that the peasants generate “real value” by “creat[ing] fruits from the black earth,” believed that “benefits of all other [social] groups result from” the *re'aya*.⁵⁹ Ahmed Azmi Efendi, an ambassador in Berlin from 1790 to 1792, also believed that “state finances” could be “improved” through amelioration of agriculture.⁶⁰ This would mean sending someone with little or no land to an “uncultivated region” where land can be “created” by “cut[ting] down trees.”⁶¹ In a similar way, the Ottoman statesman Penah Efendi (1740-1785) believed that tax revenues should be increased by granting “cultivated land along the Danube river and in other parts of Rumelia” to Ottoman subjects.⁶² This line of thinking was also adopted by the grand vizier Koca Yusuf Pasha (1730-1800) who in the late eighteenth century agreed with the original purpose behind the *malikane* system (life-time tax-farming): to encourage tax farmers to improve agriculture in their domains by “suppor[ing] the *re'aya* by giving them seed.”⁶³ Ibrahim Peçevi's narrative of the Ottoman campaign in Hungary in 1594 depicts a military commander (*serdar*) who clearly saw that preserving conquered agricultural land during war will directly contribute wealth to the state treasury in the future.⁶⁴ These examples, taken together, show that agricultural expansion was seen as a key component of the

54 Ibid., 46.

55 Ibid., 50.

56 Ibid., 67.

57 Ibid., 68.

58 Ibid., 94.

59 Ibid., 70.

60 Ibid., 145.

61 Ibid., 145.

62 Ibid., 127.

63 Cited in Fatih Emriş, *A History of Ottoman Economic Thought*, 138.

64 Ibrahim Alajbegović Pečevića. *Historija 1576-1640*, trans. Fehim Nametak (Sarajevo: El-Kalem, 2000), 132.

Ottoman state-building project.⁶⁵ Agricultural expansion, furthermore, in the eyes of Ottoman thinkers, hinged on state-sponsored justice.

The notion of justice that was seen as a prerequisite for agricultural growth demanded that the state protect the *re'aya* from oppression (i.e. violence or excessively high taxes) and ensure that the *re'aya* has access to the resources necessary for generating an agricultural surplus.⁶⁶ Kinalizade believed that “justice increases state revenues”⁶⁷ and concluded that a ruler should not abuse his power by confiscating peasant property such as “oxen.”⁶⁸ He also stated that the peasants should “remain prosperous” and should be given seed and access to crops when they ran out.⁶⁹ Na'ima noticed that the “*re'aya* can be taken under rule only through justice”⁷⁰ and argued that to benefit the state treasury, “former sultans” traditionally “protected the *re'aya* from oppression”⁷¹ and “have not let...the villages be destroyed.”⁷² If *re'aya* faced economic difficulties, he recommended that their taxes be reduced.⁷³ In his introduction to the history of Mehmed the Conqueror, the fifteenth-century literati Tursun Beg also explains that “restraint in taxation” is a form of justice.⁷⁴ The introduction to the 1519 *kanunname*⁷⁵ for Trablus-Sam explains that justice should be carried out by “relieving them (i.e. *re'aya*) of injustice and reconciling them [to the state] through the right and proper action.”⁷⁶ Selanikî Mustafa Efendi (d. 1600) in a similar vein thought that rulers' greed is a “cause of the infertility of the land.”⁷⁷ Penah Efendi subscribed to the idea that

65 This conclusion is consistent with Inalcik's suggestion that *sipahis'* wish to “increase their *timar* incomes” made them “particularly anxious to convert the pastures reserved for the pastoral nomads into cultivated lands.” See Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 41.

66 Linda Darling also sees the Ottoman “circle of justice” as a system of agrarian justice, a system meant to maintain “conditions necessary for cultivation of land.” See Linda Darling, *Revenue-Raising and Legitimacy: Tax Collection and Finance Administration in the Ottoman Empire, 1560-1660* (Leiden: E. J. Brill, 1996), 286.

67 Fatih Emriş, *A History of Ottoman Economic Thought*, 65.

68 *Ibid.*, 65.

69 *Ibid.*, 65.

70 *Ibid.*, 67.

71 *Ibid.*, 51.

72 *Ibid.*, 51.

73 *Ibid.*, 58.

74 Linda Darling, *Revenue-Raising and Legitimacy: Tax Collection and Finance Administration in the Ottoman Empire, 1560-1660*, 287.

75 *Kanunname* is a secular law book. It can be opposed to the religious law, *sharia*.

76 Cited in Linda Darling, *Revenue-Raising and Legitimacy: Tax Collection and Finance Administration in the Ottoman Empire, 1560-1660*, 287.

77 *Ibid.*, 289.

the state should not tax anything but “land, animals, trees and merchandise.”⁷⁸ Any other tax, in Penah Efendi's opinion, would be an instrument of oppression, leading to injustice.⁷⁹ The Grand vizier Muhinszade Mehmed Pasha (d. 1774/5), believing that “wealth derives” from the *re'aya*, also held that justice is necessary to bring the *re'aya* “order” and ensure that “gardens” are not “plunder[ed].”⁸⁰ Muhinszade Mehmed Pasha wanted the *re'aya* to be “protect[ed]...from oppression” with the emphasis that this should be done regardless of their religion: “the prayer of the oppressed is appreciated by God, even if the oppressed person is an infidel.”⁸¹ Ebubekir Ratib Efendi, an Ottoman ambassador in Vienna in 1791 and 1792, in the same vein suggested that the *re'aya*, “the source of everything,”⁸² should be free from harassment, unjust punishment, or tyranny.⁸³ The state, Ratib Efendi believed, should see to it that uncultivated land be invested in and that its people are not idle.⁸⁴ It is not surprising that the Ottomans' influential intellectual forefather, Ibn Khaldun, also held that “injustice ruins civilization” and that agricultural cultivation, in his view the “only way to property,” was reliant on the ruler's respect for peasants' property and commitment to fair taxation.⁸⁵

Ottoman views on agriculture and justice were embedded in Islamic discourse and practice, and as such were reinforced through religious belief and law. Kinalzade noted that “acquisition of wealth” through agriculture is ethically and religiously superior to wealth accumulation through “commerce, craftsmanship [or]...military-political power.”⁸⁶ The sultan Suleyman I strongly emphasized that the peasant was a “true benefactor of mankind.” The Prophet's reference to God's ownership of “all uninhabited, uncultivated and ownerless lands”⁸⁷ allowed the Ottomans to interpret the *sharia* to encourage “cultivation and reclamation” of land.⁸⁸ On this subject Sam White writes:

78 Fatih Emriş, *A History of Ottoman Economic Thought*, 127.

79 Ibid., 127.

80 Ibid., 124.

81 Ibid., 132.

82 Ibid., 131.

83 Ibid., 132.

84 Ibid., 149.

85 Ibid., 68.

86 Cited in Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 44.

87 Cited in Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 120.

88 Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 42.

In Islamic law, the “improvement” (*ihya*) of “empty” (*mevat*) land conferred certain rights of use or ownership, growing out of traditions that encouraged irrigation and the planting of fruit trees in the desert. In Ottoman times, officials continued to grant land to men who established irrigation for rice, for instance, while legal pronouncements (*fetvas*) established land rights for planting orchards on unused territory. However, in the early Ottoman Empire, unlike the lands of classical Islam, the trouble was more often too many trees than too few, and Ottoman practice effectively extended the idea of improvement to include clearing and cultivation in woodlands and waste.⁸⁹

Empty or “dead” land came to mean “forests, swamps, marshes...deserts” and even “abandoned” lands which stayed “uncultivated” and “ownerless over a long period of time.”⁹⁰ It was up to the *imam*, God's representative on Earth, to administer the empty land in a way that is most beneficial to the Islamic community and the Islamic state.⁹¹ Once the land becomes productive, classical Islamic thinkers recommended that one third of a peasant's income should be “collected as tax for the public treasury,” that another third be dedicated to the “maintenance of the tillage,” and that the last third be used “for the nourishment of his family and himself.”⁹² The connection between agriculture and the state treasury also becomes apparent in the religious authorities' notion of *rakaba* (i.e. *dominium eminens*). According to this prominent idea, the state had legal control or ownership of land while peasants or other groups could merely obtain rights of possession.⁹³ Agricultural (i.e. cultivated) land was distinctly seen as belonging to the state treasury and idiomatically referred to as “the land for which tithes are paid.”⁹⁴ The growth of the treasury and, by extension, the economic strength of the Empire were therefore directly proportional to the amount of land reclaimed from wastelands (and to the amount of land conquered through war).⁹⁵

89 Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 42.

90 Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 120.

91 Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 104-5.

92 Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 77.

93 Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 104-6.

94 Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 106.

95 Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 106 and 73.

The Ottoman elites' insistence on the importance of agriculture is closely related to their appreciation of demographic growth as a prerequisite for strong agricultural production. The main reason for this is that demographic growth was able to provide workers required to convert 'dead' land into productive land.⁹⁶ The state's commitment to the previously discussed agrarian justice was seen as one of the main economic and religious engines for creating conditions conducive to demographic growth.

Ibn Khaldun suggested that a populous city is likely to have more affordable food prices than a city with fewer inhabitants. The latter, he believed, was tantamount to a "weak" civilization.⁹⁷ At another point in the *Muqaddimah*, Ibn Khaldun narrates a parable that teaches that rulers' "injustice ruins civilization."⁹⁸ The signs of a ruined civilization as presented by this literatus are important to this discussion. Ibn Khaldun held that a civilization becomes weak when its peasants are leaving their farms and when settlements are being abandoned, causing "cultivation" to "slacken," the "farms" to be "ruined," and, by extension, a scarcity of money and "the complete destruction of the [ruling] dynasty."⁹⁹ The welfare of the dynasty, state and civilization is brought into a close connection with the state's demographic trends.

In the 1790s Ratib Efendi praised "European countries" where "increases in population are desired, because when the number of the subjects is greater, it leads to more justice" and "welfare."¹⁰⁰ The state, Ratif Efendi argued, should keep track of demographic changes (as per European example) because they directly relate to the country's prosperity.¹⁰¹ His reasoning is reminiscent of Ibn Khaldun's arguments:

The *re'aya* cannot stand the increasing tyranny anymore, and are leaving their territories and going to other countries. For example, a village which formerly had 150 houses, has now only 20 houses. However, this fact is

96 We must note here that, in reality, the Ottoman demographic situation in the Western Balkans was so precarious that Ottoman demographic battles had more to do with ensuring that land did not lose its inhabitants than with ensuring actual growth.

97 Cited in Fatih Emriş, *A History of Ottoman Economic Thought*, 85.

98 Cited in Fatih Emriş, *A History of Ottoman Economic Thought*, 68.

99 Cited in Fatih Emriş, *A History of Ottoman Economic Thought*, 68. Ibn Khaldun repeats this same idea in another way elsewhere in the *Muqaddimah*. See Cited in Fatih Emriş, *A History of Ottoman Economic Thought*, 65-66.

100 Cited in Fatih Emriş, *A History of Ottoman Economic Thought*, 130.

101 Cited in Fatih Emriş, *A History of Ottoman Economic Thought*, 131.

not considered in taxation, and the tax of 150 houses is demanded from this village. This is causing the destruction of the country.¹⁰²

Ratib Efendi, in effect, was implying that a lack of agrarian justice is causing agricultural land to be abandoned, which, in turn, leads to the economic and political decline of the country. He shared this sentiment with Veysi (1561-1628), a literati whom Evliya Çelebi admired and who wrote that “oppression and injustice cause the subjects to disperse,” which, in his view, was a problem.¹⁰³ The padishah's actions, Veysi argued, must be informed by “justice and equity.”¹⁰⁴ The statesman Aziz Efendi also agreed with these analysis; in the 1630s he explained that if taxes were to be gathered “without fear or dread...the wounds of the poor tax-payers...[would] be relieved” and the “villages previously abandoned...[would] produce their share of revenues for the treasury.”¹⁰⁵ Here again, demographic strength emerges as a key political and economic issue. This was an issue that, as Linda Darling explicates, “filled Ottoman officials with consternation.”¹⁰⁶

Ibrahim Peçevi's assessment of Ottoman military failures in Hungary in 1594 also relates to the importance of demographic matters. He believed that the reason for Ottoman difficulties in this region was the “scarcity” which the Ottoman army caused by destroying villages and enslaving the local populace.¹⁰⁷ This, Peçevi reasons, reduced the number of inhabitants in the land and thereby created unstable conditions for local Ottoman statesmen. Peçevi therefore saw the connection between agrarian justice, demographic strength, and political stability. Moreover, he applied this idea not only to the peasantry living inside the Empire but also to the peasantry whose territories the Ottoman Empire wished to occupy.

The Ottoman classical economic thinking involved a strong discursive support for agricultural and demographic expansion. As we will see in the next section, however, the Ottoman state was also practically committed to these ideas as it used them as a foundation of its social policy.

102 Cited in Fatih Emriş, *A History of Ottoman Economic Thought*, 132.

103 Cited in Linda Darling, *Revenue-Raising and Legitimacy: Tax Collection and Finance Administration in the Ottoman Empire, 1560-1660*, 288.

104 Ibid., 288.

105 Cited in Ibid., 289.

106 Ibid., 291.

107 Ibrahim Alajbegović Pečevija, *Historija 1576-1640*, 132.

Ottoman Policies and Actions

Throughout the early-modern period, the Ottoman Empire was pursuing policies and actions in the Western Balkans that were in agreement with the economic theory discussed in the previous section. For the sake of economic prosperity the Empire sought to expand its population and agriculture. This was done through policies that upheld property (i.e. land) rights, preserved the integrity of agricultural land, stimulated the creation of new agricultural land as well as provided increased security and other incentives in sparsely populated regions. As we might expect, these goals were to be accomplished at the expense of forested land.

Land rights in the Ottoman Empire were defined,¹⁰⁸ enforced, and in favour of agricultural growth. A number of different types of land ownership and possession coexisted in the seventeenth- and eighteenth-century Western Balkans. The most common land ownership categories were *timar*, *ziamet* and *hass* lands, which are associated with state-owned (*miri*) land and the classical Ottoman land regime. Whereas *timars* were the smallest of the three and given to *sipahis*,¹⁰⁹ *ziamets* were medium-sized pieces of land, given to military officers, and *hass* properties were the largest pieces of land, usually given to the highest-ranked military functionaries. The classical land-ownership regime also included *waqfs*, ownerless lands dedicated to specific charitable or religious purposes, and freeholds, land belonging to private individuals. In classical forms of land possession, agricultural land and produce were directly translated into state revenue, local military spending, and religious as well as charitable services. A new *timar*, *waqf*, or freehold could not be legally created from an existing *timar*, *waqf*, or freehold. Creation of new land units was to be granted only through imperial administrative channels and to be accomplished only through a conquest of new

108 Individuals seeking the right of owning or possessing a tract of land had to follow clear legal pathways towards this goal. The word “right” does not denote here anything akin to the modern notion of moral or self-evident entitlement.

109 *Sipahis* were fief-holding (i.e. *timar-holding*) members of the Ottoman cavalry.

territories or wasteland.¹¹⁰ The connection between the need to expand agriculture and meeting the tax needs of the state in this case is clear.¹¹¹

With increased monetization of economic transactions and decentralization of the state, the classical system of land possession weakened. Land was increasingly commodified, rented out to tax-farmers, and incorporated into a system of often market-oriented *çiftlik*s (i.e. farms). Whereas the classical system treated land as a direct source of revenue, which meant that the state had a strong interest in developing its own land-base, the new system treated Ottoman subjects as a direct source of monetary revenue. Land was still a revenue source, but an indirect one. In this framework of land possession it was Ottoman subjects, and not the state, who were expected to invest in agricultural expansion and intensification.¹¹² The creation of *çiftlik*s and rentals of *mezras* in the *sancak* of Bosnia around 1600 illustrates this.¹¹³

110 For example, *timars* around Baghdad were founded in 1564 to restore what the provincial governor described as “empty and ruined lands.” Another 230 *timars* were created on empty lands in the district of Mosul in 1568 and 120 additional *timars* in the district of Ardahan in the late 1560s. See Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 43. A similar logic was used when it came to the creation of *waqfs*. See Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 125. For a discussion of (privately-owned freeholds), see the following footnote.

111 The category of private or semi-private freehold land (i.e. *mulk*) is the only category in the classical landholding system whose relationship with agricultural growth might not be intuitive. Freeholds, however, are closely related to the state's need to increase its agricultural land base. While not as common as units of *miri* land, freeholds were created in insecure or inhospitable areas such as swamps, forests and borderlands where new economic initiatives required additional incentives to attract potential investors. For sixteenth-century examples see Inalcik's *Economic and Social History of the Ottoman Empire*, 123, 124 and 168. Also see Fikret Adanir, “The Ottoman Peasantries, c. 1360-c.1860,” 295 and 305. Fikret Adanir, “Tradition and Rural Change in Southeastern Europe During Ottoman Rule,” in *The Origins of Backwardness in Eastern Europe*, ed. Daniel Chirot (University of California Press: Berkeley, Los Angeles and London, 1989), 139. Freeholds alongside tax reductions might also be given to individuals to facilitate ventures that were capital intensive and therefore too expensive to be handled by the state. Rice cultivation as well as the building and maintenance of associated dams are examples of such ventures. See *Ibid.* and Dragana Amedoski, “Uzgajanje Pirinča na Toplici” in *Belopalanački Zbornik* 3 (2007): 140. The status of land, in practice, was occasionally changed from *miri* to freehold, but such land transfers were rare. See Bruce McGowan, *Economic Life in Ottoman Empire: Taxation, Trade and the Struggle for Land, 1600-1800* (Cambridge University Press: Cambridge, London, New York, 1987), 54. For additional information see Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 140.

112 This is exactly what Koca Yusuf Pasha (1730-1800) suggests in relation to life-long tax-farming contracts. Cited in Fatih Emriş, *A History of Ottoman Economic Thought*, 138.

113 For additional historical context, see Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 162-171.

The Bosnian *tahrir defter* of 1604 (i.e. tax register) shows that the Empire was relying on private initiative to organize production in abandoned villages. Enterprising Ottoman subjects would be given a right to manage and redevelop an abandoned piece of land in exchange for annual lump-sum payments to the state. The following examples are taken from the *defter* notes on the *nahiya* (i.e. district) of Saraj. At one point, the *defter* informs us that a *çiftlik* in Mehmed's possession contained certain “abandoned lands.”¹¹⁴ Another *çiftlik* incorporated an empty piece of land after the “infidel Vladoje Vladic” decided to abandon it.¹¹⁵ Similarly, the *çiftlik* belonging to Hamza Jusuf was formed out of “abandoned land.”¹¹⁶ Comparable narratives were applied to Alija's *çiftlik* near Sarajevo,¹¹⁷ to a *çiftlik* in the *nahiya* of Olovo belonging to the sons of Sejd Alija,¹¹⁸ and to Arsan Vojvoda's *çiftlik* in the *nahiya* of Lefče. The last one was likely formed in the middle of the sixteenth century when the *vojvoda*¹¹⁹ “bought” the “abandoned” land.¹²⁰ This example might not fall strictly in our study's time period, but the example explicitly and clearly displays the chronology of *çiftlik* formation: *re'aya* abandons the land; the land is empty for a period of time; someone purchases the land; the land is productive and the owner pays an annual lump sum fee (800 *akçe* in this case) to the state.¹²¹

A similar logic was applied to *mezras*, agricultural fields which once were a village or belonged to a village, but were then deserted by most or all of its inhabitants. Private individuals had opportunities to rent out and rehabilitate these plots. To attract *re'aya*, *mezra* owners would often ensure the availability of “seed, oxen, and domiciles to the sharecroppers.”¹²² For example, the *mezra* of Gauca in the *nahiya* of Saraj was owned by Muhamed, the son of Turhan, who brought peasant “outsiders” to work the land.¹²³ Muhamed already possessed a more productive *mezra* nearby. The addition of

114 Adem Handžić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. I/1* (Sarajevo, Orientalni Institut u Sarajevu, 2000), 222.

115 Adem Handžić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. I/1*, 181.

116 Adem Handžić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. I/1*, 191.

117 Adem Handžić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. I/1*, 213.

118 Amina Kupusović, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. III* (Sarajevo, Orientalni Institut u Sarajevu, 2000), 200.

119 *Vojvoda* is a military rank.

120 Amina Kupusović, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. III*, 517.

121 The process of *çiftlik* formation we see in what is today Serbian, Macedonia and Bosnia. See Olga Zirojević, *Srbija pod Turskom Vlašću (1450-1804)* (Damad: Novi Pazar, 1995), 57.

122 Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 167.

123 Adem Handžić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. I/1*, 181.

abandoned land to his possessions and into his economic activity was exactly the behaviour that the Porte wished to encourage. Both in the classical system of land possession as well as in its subsequent, commercialized counterpart, we see that all dominant types of Ottoman land tenure were instituted to expand revenue sources *vis-a-vis* agricultural expansion.

A comprehensive system of laws (i.e. *kanuns*) incentivized Ottoman subjects to 'create' new land and also protected the integrity of land that was already in use. Since land surveys in the classical land system were infrequent, it was often in the interest of a *sipahi* to facilitate forest clearing on his *timar*. Any income generated from the cleared area would not be taxed until the next land survey.¹²⁴ In some parts of the Empire, Inalcik tells us, the state's involvement in the "reclamation of land for settled agriculture" increased in the seventeenth century.¹²⁵ Our primary sources show that the Western Balkans too had policies in place meant to facilitate land clearing.

The 1604 *defter* for Bosnia tells us about Mehmed Çelebi, the son of Ahmed-havadze, who was taxed a mere 20 *akçes* for land in the villages of Gornja Ukrina and Donja Ukrina, the land that he personally cleared.¹²⁶ A typical farm of this size in this *nahiya* at this time would be taxed 30 *akçes*.¹²⁷ This means that cleared land would come with tax benefits, the trend which is consistent with the law spelled out in the Bosnian *kanunname* of 1539: "the one who enlivens empty land" (by means of an axe) "is to be freed from all [additional] taxes."¹²⁸ The 1570 *kanunname* for the *sancak* of Klis states that a peasant who cleared his land "with the sweat of his brow" would be able to leave his land to his daughters as an inheritance.¹²⁹ The same would not be true for a peasant who did not personally clear his land. Even though these examples are rooted in the sixteenth century, it is likely that at least the 1570 *kanunname* would have been

124 Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 109.

125 Ibid., 444.

126 Jelena Mrgić, *Severna Bosna: 13.-16. vek*, 293. Also see Adem Handžić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. I/2* (Sarajevo, Orientalni Institut u Sarajevu, 2000), 379.

127 Dobor is the *nahiya* in question. See Adem Handžić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. I/2* (Sarajevo, Orientalni Institut u Sarajevu, 2000), 379.

128 I inserted "additional" in the sentence because the lawmaker expects that the peasant would pay *filuria*, a pastoral tax which was lower than the tax the *re'aya* was ordinarily expected to pay. Jelena Mrgić, *Severna Bosna: 13.-16. vek*, 292.

129 Branislav Đurđev, Nedim Filipović and Hazim Šabanović. eds. and trans. *Kanuni i Kanunname za Bosanski, Hercegovački, Zvornički, Klisčki, Crnogorski i Skadarski Sandžak*, 139.

valid during the initial few decades of our study period. The Ottoman commitment to agricultural growth or stability was also to be seen in laws meant to preserve the continuity of land ownership and productivity.

Ottoman secular law was there to address situations in which a piece of land was not productive for a period of time, or in which the land was used illegally. In the late sixteenth century, as more and more peasants chose to abandon their villages, the state “increased the monetary penalty” [the peasants would have to pay] for uncultivated land from 75 to 300 *akçe* per farm.¹³⁰ In a similar vein, a sultan ordered via official letter (i.e. *ferman*) in 1635 that the *re'aya* who abandoned their villages in the *sancak* of Smederevo were to be moved to their original location.¹³¹ The 1637 *kanunname* for the *sancak* of Hercegovina stipulates that a peasant who abandons a farm in order to cultivate another farm elsewhere would have to pay taxes to his *timar* holders in both locations. This policy was meant to keep peasants from abandoning their land in the first place.¹³²

If a farm was derelict because a peasant abandoned it or died without having a legally designated heir, the local *kadi* (i.e. judge) would issue a new *tapu* (land-claim) to another peasant as soon as possible. For example, the vineyard and lands left behind by Ahmed, a peasant who abandoned the village Vukodol, were granted to Danijal-beg by the revenue administrator (*bacdar*) Sulejman čehaja in 1632.¹³³ Similarly, after the death of Mehmed-celebi, the *tapu* for his lands in Smrčenjaci and Bukanje (near Mostar) was granted to Abdi-čelebi by the *Dervis katib* and approved by the Mostar *kadi*.¹³⁴ The *kadi* also granted the abandoned field Mrčevina to Mahmud-basa in 1630.¹³⁵ The Ottoman interest in the protection of agricultural land can also be seen in laws meant to protect the land from other types of use.

130 This was for those cases in which the state managed to locate the missing peasant. See Olga Zirojević, *Srbija pod Turskom Vlašću (1450-1804)*, 74.

131 Olga Zirojević, *Srbija pod Turskom Vlašću (1450-1804)*, 74.

132 Abandoned land was described in the Mostar *sicil* in 1633 as a “loss for the *sipahi*.” See Mujić, Muhamed A., trans. *Sidžil Mostarskog Kadije 1632-1634* (Mostar: Ikro Prva Književna Komuna, 1987), entry 499. Accordingly, a farm that would bring no income to a *sipahi* would be taken away from the unproductive peasant and given to someone else. See Mujić, Muhamed A., trans. *Sidžil Mostarskog Kadije 1632-1634*, entries 174 and 175.

133 Mujić, Muhamed A., trans. *Sidžil Mostarskog Kadije 1632-1634*, entry 404.

134 *Dervis katib* appears to be a type of scribe. See Mujić, Muhamed A., trans. *Sidžil Mostarskog Kadije 1632-1634*, 406.

135 Mujić, Muhamed A., trans. *Sidžil Mostarskog Kadije 1632-1634*, entries 497-499.

Even though pastoralism gained economic importance in our period, Ottoman policies ensured that this type of land-use does not encroach upon agricultural activities.¹³⁶ It was a region-wide law that livestock be allowed on agricultural fields only after the harvest. The reference to this rule can be found in the 1579 *tahrir defter* for Požega and in the 1563 *tahrir defter* for Pakrac.¹³⁷ In our period it was highly desired that livestock be accompanied by a shepherd, someone who would prevent damage to crops and gardens. On May 8, 1743, the *kadi* of Tešanj in Bosnia summarized the testimony of local villagers who assured the *kadi* they would hire two shepherds: Ibrahim, the son of Alin, and Ibrahim, the son of Omer. The shepherds' contract would last until November 8¹³⁸ and their payment would consist of food, clothes, and 80 *akçe* per animal.¹³⁹ The Porte formalized this line of thinking Empire-wide on July 10, 1845, when it legislated that livestock could not be pastured without supervision, and also regulated the maximum number of animals that could be supervised by a single shepherd.¹⁴⁰

Sharia courts were there to provide justice for individuals whose grain, vegetable or viticulture crops had been damaged by livestock. While the owner of the offending herd would be responsible to compensate the landowner for such damage, repeat offenders would face harsher penalties.¹⁴¹ Omer, the *kadi* of Nevesinje, which is a town in the *sancak* of Hercegovina, on August 11, 1772 made a list of livestock infractions in the villages of Ljubinje, Stoca, and Blagaj. The Bosnian governor (*vali*) ordered that the damage be surveyed, the task which was completed by a special administrative official.¹⁴² The court record (i.e. *sicil*) this was recorded in also reports that the *vali* at one point issued an order that the owners of offending livestock stop using agricultural land

136 Military campaigning is another activity that could severely cripple regional agriculture. To ensure a successful harvest, the Ottoman army in 1599, during an attack on Austro-Hungarian Kanjiza (present-day Nagykanizsa in Hungary), was given specific orders to purchase food staples from peasants at realistic prices, to ensure there be no theft in the countryside, and to avoid walking on buckwheat fields. Ibrahim Peçevi also adds that Rahmetli Ibrahim-pasa, the *sancacbey* of Smederevo and the leader of the campaign, personally admonished Peçevi after Peçevi was caught walking on buckwheat fields. Ibrahim Alajbegović Pečevića. *Historija 1576-1640*, 195.

137 Hamid Hadžibegić, "Porez na Sitnu Stoku i Koristenje Ispaša," *Prilozi za Orijentalnu Filologiju* 8-9 (1958-9): 100.

138 The day of the Christian holiday Mitrovdan.

139 Hamid Hadžibegić, "Porez na Sitnu Stoku i Koristenje Ispaša," 105.

140 Hamid Hadžibegić, "Porez na Sitnu Stoku i Koristenje Ispaša," 106.

141 Hamid Hadžibegić, "Porez na Sitnu Stoku i Koristenje Ispaša," 104.

142 Hamid Hadžibegić, "Porez na Sitnu Stoku i Koristenje Ispaša," 104.

in the villages of Kljuni and Presjek in the *kadilik*¹⁴³ of Nevesinje.¹⁴⁴ Likewise, the “poor people” cultivating fields in the villages Morine and Crvnje demanded that offending pastoralists coming from outside Nevesinje be captured and forced to pay for the damage their livestock caused.¹⁴⁵ The *sicil* of Blagaj¹⁴⁶ informs us that Husein, the son of Mehmed, accused Saban that his horses “ruined” a field in the village of Vranjevići, which the accused admitted to be true.¹⁴⁷ The *sicil* of Mostar also lists a number of similar infractions. Four inhabitants of Cernica, Mustafa, Mehmed, Marko, and Pavle were found guilty of allowing their livestock to “destroy...crops” and were warned by the *kadi* “not to interfere with anyone’s property.”¹⁴⁸ Similarly, after they confessed that their sheep were interfering with the “vineyards belonging to Muslims,” the accusers asked that the offenders pay “3000 *akçe* and receive 3000 lashes” if the infraction ever gets repeated.¹⁴⁹ The mufti of Mostar and other locals also complained on November 19, 1633 that sheep and goats belonging to incoming Vlachs were “harming [agricultural] crops.”¹⁵⁰ The *kadi* issued a warning against this act.

When it was not apparent whether an accusation of pastoral misconduct was true or not, the Mostar *kadi* would investigate the matter by interviewing relevant witnesses.¹⁵¹ In one case, the owner of a horse which strayed into a field belonging to Mustafa admitted the infraction and stated that he would compensate Mustafa if the horse “caused any damage.”¹⁵² We might conclude here that the court enforcement of these rules in the region was so common that this particular offender accepted the penalty with no objection. These examples, taken together, suggest that even though pastoralism was increasing in economic importance in our period, the Ottoman Empire

143 *Kadilik* is a judicial district administered by a *kadi*.

144 Hivzija Hasandedić, trans., *Sidžil Nevesinjskog Kadije: 1767-1775. Godine* (Mostar: Arhiv HNK/Ž, 2009), 28 and 29.

145 Hivzija Hasandedić, trans., *Sidžil Nevesinjskog Kadije: 1767-1775. Godine*, 38.

146 Blagaj, just like Nevesinje, was in the *sancak* of Hercegovina.

147 Hivzija Hasandedić, trans., *Sidžil Blagajskog kadije: 1728-1732. Godine* (Mostar: Islamski Kulturni Centar, 2009), 36. For another case in the village of Hodbine in the same district in 1712 see Hivzija Hasandedić, trans., *Sidžil Blagajskog kadije: 1728-1732. Godine*, Hivzija Hasandedić, trans., *Sidžil Blagajskog kadije: 1728-1732. Godine*, 101. This entry shows that the *kadi* was ordered to “survey the situation, obtain compensation for the harm done, and forbid...villagers to pasture livestock in Hodbine.”

148 Mujić, Muhamed A., trans. *Sidžil Mostarskog Kadije 1632-1634*, entry 266.

149 Mujić, Muhamed A., trans. *Sidžil Mostarskog Kadije 1632-1634*, entries 516-517.

150 Mujić, Muhamed A., trans. *Sidžil Mostarskog Kadije 1632-1634*, entries 506-7.

151 Mujić, Muhamed A., trans. *Sidžil Mostarskog Kadije 1632-1634*, entry 408.

152 Mujić, Muhamed A., trans. *Sidžil Mostarskog Kadije 1632-1634*, entry 463.

and its policies actively attempted to preserve and extend agriculture. This policy went hand-in-hand with Ottoman efforts to turn nomads into peasants and to keep peasants as close to their lands as possible.

The Empire did its best to encourage agricultural growth by ensuring that the working segment of the population (i.e. peasants) were numerous and near fields that had to be worked. The Empire sought to increase the supply of peasants by converting nomads and semi-nomads into *re'aya* as well as by providing for their safety.

While provision of personal safety was one among many policies that kept peasants on land, there were policies in place meant to attract peasants who had already abandoned their fields. The large portion of Vlachs who stayed¹⁵³ in the Ottoman Empire embraced agriculture by the 1580s. The Porte initially sought to fulfill its demographic aims by using tax incentives to encourage semi-nomadic Vlachs to occupy thinly populated territories. Eventually the Empire nullified Vlachs' tax privileges, and attracted them to agriculture by providing free land to Vlach commoners as well as *timars* and tax benefits to Vlach leaders.¹⁵⁴ Vlach peasants were to be found across the Western Balkans: Smederevo *sancak*,¹⁵⁵ Zvornik *sancak*,¹⁵⁶ Bosnia *sancak*,¹⁵⁷ Vidin

153 A significant portion of the Vlach populace moved into Habsburg lands after the 1540s, when Vlachs started losing their tax privileges. See Nikolay Antov, "The Ottoman State and Semi-Nomadic Groups along the Ottoman Danubian Serhad in the Late 15th and the First Half of the 16th Centuries: Challenges and Policies," *Hungarian Studies* 27 (December 2013): 7.

154 Nikolay Antov, "The Ottoman State and Semi-Nomadic Groups along the Ottoman Danubian Serhad in the Late 15th and the First Half of the 16th Centuries: Challenges and Policies," 228-229.

155 Aleksandar Kristic, "Seoska Naselja u Podunavlju i Posavini Srbije i Juzne Ugarske u 15. i Prvoj Trećini 16. Veka," *Istorijski Časopis* LII (2005): 179.

156 Aleksandar Kristic, "Seoska Naselja u Podunavlju i Posavini Srbije i Juzne Ugarske u 15. i Prvoj Trećini 16. Veka," 178.

157 Adem Handžić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. I/2* (Sarajevo, Orientalni Institut u Sarajevu, 2000), 396.

sancak,¹⁵⁸ *Kruševac sancak*,¹⁵⁹ *Srem sancak*,¹⁶⁰ *Požega sancak*, *Pokrac sancak*,¹⁶¹ and *Hercegovina sancak*.¹⁶²

The main thrust of these changes occurred before 1580. However, there is evidence that Ottoman land-tenure system continued to pressure nomads to convert to agriculture in our period. That Ottoman lawmakers (i.e. writers of *fermans* and *kanunnames*) kept pushing nomads towards agriculture after the 1580s can be seen by comparing the state's attitude towards agricultural Vlachs to the corresponding attitude towards nomadic Vlachs.¹⁶³ The former we can observe in the *kanunnames* for the *sancak* of Hercegovina from 1637/8 as well as in the Bosnian *defter* for 1604. The latter attitude can be observed in the 1630s Mostar *sicill*. The *kanunnames* noted that "land in certain Serbian villages was left empty" and that the land was "therefore settled by Vlachs."¹⁶⁴ The same document suggest that certain "outsider" Vlachs "worked Serbian land."¹⁶⁵ The author of the *kanun* takes this arrangement for granted and proceeds to assign taxes that each of the two groups of agricultural Vlachs were supposed to pay. The author of the Bosnian *defter* also took it for granted that individual Vlach families occupied farms, made tax contributions to the state¹⁶⁶ and, in one case, settled into the town of Glasinac to protect travellers passing through a local gorge in exchange for tax

158 Nikolay Antov, "The Ottoman State and Semi-Nomadic Groups along the Ottoman Danubian Serhad in the Late 15th and the First Half of the 16th Centuries: Challenges and Policies," 229.

159 Milan Vasić, "Stanovništvo Kruševackog Sandžaka i Njegova Struktura," in *Kruševac Kroz Vekove*, ed. Adam Stošić (Narodni Muzej Kruševac: Kruševac, 1972), 63.

160 Nenad Lemajic, "Agrarni Odnosi i Razvoj Poljoprivrede u Sremu Polovinom XVI Veka," *Istraživanja* 15 (2004): 79.

161 Aleksandar Kristic, "Seoska Naselja u Podunavlju i Posavini Srbije i Juzne Ugarske u 15. i Prvoj Trećini 16. veka," 15-6.

162 Branislav Đurđev, Nedim Filipović and Hazim Šabanović. eds. and trans. *Kanuni i Kanun-name za Bosanski, Hercegovački, Zvornički, Kliški, Crnogorski i Skadarski Sandžak*, 150. Also see Nedim Filipović, "Vlasi i Uspostava Timarskog Sistema u Hercegovini," in *Godišnjak Knjiga XII*, ed. Alojz Benac (Centra za Balkanološka Ispitivanja: Sarajevo, 1974), 132.

163 Outside the Western Balkans, the Porte's strong interest in settling nomads could be seen in Anatolia, where the "Ottoman government" attempted to "force the settlement of nomads and semi-nomads through administrative pressure...between 1691 and 1696. See Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 446.

164 Branislav Đurđev, Nedim Filipović and Hazim Šabanović. eds. and trans. *Kanuni i Kanun-name za Bosanski, Hercegovački, Zvornički, Kliški, Crnogorski i Skadarski Sandžak*, 150.

165 Branislav Đurđev, Nedim Filipović and Hazim Šabanović. eds. and trans. *Kanuni i Kanun-name za Bosanski, Hercegovački, Zvornički, Kliški, Crnogorski i Skadarski Sandžak*, 150.

166 Some examples can be found in Adem Handžić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. II/2*, 404, 566, and Amina Kupusović, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. III* (Sarajevo, Orientalni Institut u Sarajevu, 2000), 432, 436, 443.

benefits.¹⁶⁷ However, pastoral (and likely semi-nomadic) Vlachs arriving to an agricultural area near Mostar were seen by the local *kadi* as a disruptive influence. The *kadi* asked that no one supports the arrival of these settlers, seemingly because their animals were damaging agricultural fields.¹⁶⁸ These examples, taken together, suggest that Vlachs whose economic activity matched Ottoman demographic and agricultural goals were able to integrate into the Ottoman society. The examples also show that those Vlachs whose economic activity contradicted Ottoman goals were discriminated against. These pressures would force semi-nomads either to settle or seek out 'empty' land elsewhere. This interpretation is consistent with Sam White's analysis of nomadic life in the Ottoman Empire. He suggests that nomads' tax burden increased and that their mobility, otherwise essential to their livelihood, was restricted. This, in his view, forced Vlachs either to "accept rising restrictions on their movement," or to "settle down themselves and join the villages that usurped their traditional pastures."¹⁶⁹ The agricultural state made it impossible for nomads to win.

The Porte worked hard to keep peasants on land or, in the case they had already abandoned their fields, to bring the peasants back. The legal system attempted to keep peasants attached to the land for as long as this rule could be enforced. At times, even peasants who were away from their farms for as long as forty years were expected to return to work their land.¹⁷⁰ This example does not share context with the following example, but they share a common theme – the state's intention to keep *re'aya* tied to land. In 1690, as the Ottoman army was conquering back what is today Serbia from the Habsburgs, Habsburg soldiers decided to surrender the fortress of Pirot (near the town of Niš) in exchange for safe passage home.¹⁷¹ Mustafa-beg, the leader of the Ottoman army, ensured that anyone leaving the fortress was screened. One of his goals was not to let any peasants escape. Husein-pasha returned the peasants found in the fortress to

167 This information is found in a *ferman* originally published in July 8, 1589, but which was subsequently included in this *defter*. The original announcement was made by Hasan, Sarajevo's *kadi*. See Amina Kupusović, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. III*, 92.

168 Muhamed A. Mujić, trans. *Sidžil Mostarskog Kadije 1632-1634*, entries 506-7.

169 Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 232-3.

170 Because this law was hard to enforce, after 1640 the state started to bargain with fugitives instead. Linda Darling, *Revenue-Raising and Legitimacy: Tax Collection and Finance Administration in the Ottoman Empire, 1560-1660*, 96-97.

171 Tatjana Katić, *Tursko Osvajanje Srbije 1690. Godine* (Beograd: Srpski Genealozski Centar, 2012), 46.

their farms ordered them to stay there.¹⁷² To ensure that Belgrade be rebuilt after the first segment of the War of the Holy League (1683–1698), the Porte announced in 1690 that anyone wishing to move to Belgrade or its vicinity would be able to do so without any negative consequences. Newcomers would be granted tax benefits and the only condition was for newcomers to “rebuild something.”¹⁷³ Similarly, in order to get peasants to colonize a “dangerous” border-town, the Porte lowered taxes in the region. This can be seen from a *ferman* issued in January 1590 and subsequently incorporated into the 1604 *defter* for the sancak of Bosnia. Concerned with the town of Novo Jajce in the *nahiya* of Trebava, the *ferman* asked that “no one interferes with [or questions] those who are arriving there to settle with their families.”¹⁷⁴ The Porte, in order to “enliven the town,” then ordered that these individuals would not have to pay two extraordinary taxes (*avariz* and *tekalif*).¹⁷⁵ The Porte here again demonstrates its preference for demographic growth and economic development in territories 'emptied' by war or by border skirmishes.

In 1768 the sultan Mustafa III asked that his newest *ferman* be read aloud across Rumelia. The *ferman* announced that the sultan bestowed upon all Ottoman subjects, “*the re'aya* and others...the full protection and safety in every way.”¹⁷⁶ In fact, the provision of security and agricultural justice was one of the Porte's most significant concerns. Without security, peasants would scatter and agricultural work and trade would slow down. To protect its economy and subjects from banditry, the Porte established a network of *palankas*¹⁷⁷ and *derbends*,¹⁷⁸ as well as sought to clear forests.¹⁷⁹ Illegal appropriation of property, be it a side-effect of war or a result of corrupt

172 Tatjana Katić, *Tursko Osvajanje Srbije 1690. Godine*, 46 and 77.

173 Tatjana Katić, *Tursko Osvajanje Srbije 1690. Godine*, 121.

174 Adem Handžić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. I/2*, 453.

175 Adem Handžić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. I/2*, 453.

176 Hivzija Hasandedić, trans., *Sidžil Nevesinjskog Kadije: 1767-1775. Godine*, 62.

177 *Palankas* are small-sized wooden fortresses. For Çelebi's description of a *palanka* near Osijek. Evlija Çelebi, *Putopis*, 366.

178 *Derbends* were village colonies that the state built along significant trade routes, often in dangerous territories. These colonies were often associated with gorges, bridges, and ferries because they were most vulnerable nodes in the regional transport network. A peasant living in *derbends* were allowed to bear arms, which was not the case with peasants elsewhere.

See Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 44.

179 Forests were dangerous because were a camouflage for *hayduks*.

behaviour of wealthy individuals, was meant to be addressed through the rule of law. All these elements were important factors in the Empire's pursuit of its demographic goals.

That the protection of the peasantry was essential to the Porte can be seen in two Ottoman *sicils* where *kadis* kept records of political appointments and correspondence: the eighteenth-century *sicils* for Blagaj and Nevesinje. For example, when the sultan Ahmed III reappointed Rustem-pasa to the position of the governor of the Herzegovina *sancak*, the sultan emphasized Rusem-pasa's duty to "protect the *re'aya* and poor people from all kinds of violence and injustice."¹⁸⁰ The same duty was emphasized in 1731, when the sultan Mahmud I appointed Osman-pasa as the governor of the Bosnian *vilayet*.¹⁸¹ Just a year earlier, the Bosnian governor himself instructed all *kadis*, *ayans*, and military personal in the Herzegovina *sancak* to "protect the poor *re'aya*" while the governor was waging war on Montenegrins.¹⁸² When the Bosnian governor reappointed Jaffar as the *muteselim* of Herzegovina, Jaffar was asked to "protect the *re'aya* from...violence."¹⁸³ In his declaration directed to lower-ranked statesmen, the governor announced that the "most significant duty of everyone is to ensure peace and safety for the *re'aya* and travellers."¹⁸⁴ The same logic applied to the appointments of Muamed-pasa as the governor of Bosnian *sancak* in 1770,¹⁸⁵ *Alibeg Ljubović* as the governor (i.e. *muteselim*) of Bosnian *sancak* in 1769,¹⁸⁶ and Mehmed-pasa as the sub-governor (i.e. *kaymakam*) in Travnik in 1768.¹⁸⁷ An imperial *ferman* likewise proclaimed that any *ayan* who "harms" peasants should lose his position.¹⁸⁸ The major regional state officials therefore shared the Porte's vision of keeping Ottoman subjects safe, and attempted to spread this agricultural ethics to the lower echelons of the Ottoman political hierarchy.

The Ottoman state's efforts to develop and support its network of *derbends* and *palankas* stemmed from the state's inclination to expand economically and demographically. To protect the *re'aya* occupying state farms around Kučajna (in the

180 Hivzija Hasandedić, trans., *Sidžil Blagajskog kadije: 1728-1732. Godine*, 16.

181 Hivzija Hasandedić, trans., *Sidžil Blagajskog kadije: 1728-1732. Godine*, 63.

182 Hivzija Hasandedić, trans., *Sidžil Blagajskog kadije: 1728-1732. Godine*, 56.

183 Hivzija Hasandedić, trans., *Sidžil Nevesinjskog Kadije: 1767-1775. Godine*, 38-9.

184 Hivzija Hasandedić, trans., *Sidžil Nevesinjskog Kadije: 1767-1775. Godine*, 41.

185 Hivzija Hasandedić, trans., *Sidžil Nevesinjskog Kadije: 1767-1775. Godine*, 42.

186 Hivzija Hasandedić, trans., *Sidžil Nevesinjskog Kadije: 1767-1775. Godine*, 54.

187 Hivzija Hasandedić, trans., *Sidžil Nevesinjskog Kadije: 1767-1775. Godine*, 61.

188 Hivzija Hasandedić, trans., *Sidžil Nevesinjskog Kadije: 1767-1775. Godine*, 53.

sancak of Smederevo) and to “guard the [nearby] mountain,” the Porte, in 1586, ordered (in a *ferman*) that a security group consisting of twenty-six peasants be created.¹⁸⁹ In exchange for their services, the peasants were to be freed from extraordinary taxes and *devşirme*.¹⁹⁰ Similarly, the Porte intended to stop murdering bandits between Niš and Pirot by erecting a *palanka* there in 1638.¹⁹¹ In 1704, an additional note was added to the 1604 Bosnian defter, indicating that the *derbend* of Crnjanska near Jajce was there to protect “travellers and their property.”¹⁹² A similar logic was applied to the *derbends* of Dolnja Ukrina and Gornja Ukrina.¹⁹³ On July 8, 1589, the Porte issued orders (in a *ferman*) to convert a village in the Rogatica *kadilik* (Bosnian *sancak*) into the town of Glasinac. This was done because the region was so dangerous that “no one dared to visit the village.”¹⁹⁴ The new improvements, the Porte believed, would allow “travellers to...move without obstacles” which would also be “more beneficial for the state treasury.”¹⁹⁵ The Porte's comments in this case clearly link the ideas of demographic expansion, provision of security, mobility, trade, and state funds.

The Porte was also quite interested in the state of its security network. For example, we know that on October 7, 1717 Ottoman bureaucrats composed a *defter* listing all *palankas* in the vicinity of Niš. The defter included information on the number of soldiers occupying the *palankas* of Svrljig, Pirot, and Niš, as well as on the soldiers' length of service.¹⁹⁶ In 1769 the *kadi* of Nevesinje drew up a list of local “dangerous gorges” to fulfill the “imperial order” he received at an earlier time.¹⁹⁷ The state, therefore, not only surveyed its security network, but also actively analyzed it for potential weaknesses.

189 Olga Zirojević, *Srbija pod Turskom Vlašću (1450-1804)*, 61.

190 The 1637 kanunname for the sancak of Hercegovina also stipulates that individuals living in *derbends* were to be free from extraordinary taxes. Branislav Đurđev, Nedim Filipović and Hazim Šabanović, eds. and trans. *Kanuni i Kanun-name za Bosanski, Hercegovački, Zvornički, Kliški, Crnogorski i Skadarski Sandžak*, 150.

191 Olga Zirojević, *Srbija pod Turskom Vlašću (1450-1804)*, 62.

192 Adem Handžić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. I/2*, 436.

193 Adem Handžić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. I/2*, 374 and 378.

194 Amina Kupusović, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. III*, 92.

195 Amina Kupusović, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. III*, 92.

196 Srdjan Katić, “Niška Tvrdjava Posle Pada Beograda 1717. Godine” *Istorijski Časopis XXXIX* (1992), 131-133.

197 Hivzija Hasandedić, trans., *Sidžil Nevesinjskog Kadije: 1767-1775. Godine*, 46-7.

The Porte's dedication to the provision of security for its populace could also be seen in the state's persecution of forests, which Ottoman statesmen frequently saw as a natural habitat for bandits.¹⁹⁸ The Bosnian *defter* of 1604 mentions that the region around Dolnja Ukrina was “overgrown by forests, which are convenient hiding places for bandits.”¹⁹⁹ Ibrahim Peçevi also notices that “ever bit of forest [near Bukurest in 1595] was packed with thousands of infidels” who “instilled fear” into the “Islamic army.”²⁰⁰ In 1690, the Ottoman army defeated a band of forty bandits in an oak forest near Niš. The connection between forests and insecurity was so strong in the Ottoman mind that burning a forest was seen as a security measure. We know that in the sixteenth-century Edirne and Albania forests were burnt down because of the outlaws who inhabited the forests.²⁰¹ The French traveller Pouqueville reports that this also was happening around Priština in the early nineteenth century when Becir-pasa left “ashes behind one section of a forest.”²⁰² Evliya Çelebi informs us that in 1660 one Ottoman army containing 53,000 men also employed 3000 “builders, diggers and tree-fellers.”²⁰³ One night in the 1660s, Çelebi's company of travellers feared an incoming attack so much that it “cleared the forest” around their bivouac.²⁰⁴

Next to establishing a network of safe spaces and selectively clearing forests, the Ottoman state also sought to secure its populace through the rule of law. Illegal appropriation of land and of other property became a region-wide problem in the seventeenth and eighteenth centuries, a problem that the Porte did its best to push back against. The Porte, for example, tried to fight against the creation of çiftliks through illegal means (i.e. appropriation of land).²⁰⁵ In 1792 the Empire issued a *ferman*

198 The Ottoman state also kept the “*re'aya*” safe from bandits by organizing and maintaining a militia for this purpose. See Hivzija Hasandedić, trans., *Sidžil Nevesinjskog Kadije: 1767-1775. Godine*, 11, 20, 27-8, and 73-4. At times, commanders of the Ottoman army would use this military force for purposes that went beyond (international) warmaking; the army would also be used to fight bandits inside the Empire. See Ibrahim Alajbegović Pečevija, *Historija 1576-1640*, 143-4.

199 Adem Handžić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. I/2*, 374.

200 Ibrahim Alajbegović Pečevija, *Historija 1576-1640*, 144.

201 Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 47.

202 Branislav Djurdjev and Milan Vasić, eds., *Jugoslavenske Zemlje pod Turskom Vlašću (do Kraja XVIII Stoljeća): Izabrani Izvori* (Zagreb: Školska Knjiga, 1962), 148-9.

203 Evliya Çelebi, *Putopis*, 174.

204 Evliya Çelebi, *Putopis*, 484.

205 Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, and Donald Quataert, ed., *An Economic and Social History of the Ottoman Empire 1300-1914*, 448.

outlawing the Janissaries' illegal appropriation of peasants' land around Belgrade.²⁰⁶ Not much later, the Porte also ordered these Janissaries to sell agricultural land, forbade the creation of *çiftliks*, and eventually even expelled the offending Janissaries from the area.²⁰⁷ In 1695, the state also attempted to repopulate scattered peasant populace in the *sancaks* of Kruševac and Smederevo by promising that the peasants' lives would be protected. The state asked the *aga* (i.e. Janissary commander) from Kruševac not to mistreat returning peasants and to report anyone who opposed the resettlement.²⁰⁸ The Ottoman centre also tried to prohibit the local elites' efforts to forcefully repopulate the *sancak* since these seemed to be counter-productive.²⁰⁹

Further examples of imperial efforts to protect peasants from illegal appropriation of land can be found in the 1780s provincial record of complaints from Manastir as well as in the 1760s/1770s *sicil* from Nevesinje. In 1782, a court record was made on the appropriation of Christian land in the district of Prilep.²¹⁰ In the same year the court also took notice of an illegal discharge of rice water onto agricultural land near Kocani²¹¹ and recorded an instance of an illegally seized vineyard in the district of Florina.²¹² Another case involved a usurpation of “fields” and “produce” from a farm that the peasant Kosta was working on Imperial lands.²¹³ As these court records were being made, the court also assigned an official to each case. The *kadi* of Nevesinje also worked to address issues related to usurpation of land. In 1771 he asked that the Bosnian *vali* addresses the land usurpation complaint made by Mehmedaga Haznadarevic against Ismail Šabanovic in the village of Lukovica.²¹⁴ The *kadi* also recorded a request that Abdulgin, a Roma man, be “punished” for usurping the *çiftlik* belonging to Abdulah Korkut in the

206 Olga Zirojević, *Srbija pod Turskom Vlašću (1450-1804)*, 139.

207 Olga Zirojević, *Srbija pod Turskom Vlašću (1450-1804)*, 140.

208 Radmila Tričković, “Kruševački Sandžakbegovi u 18. Veku,” in *Kruševac Kroz Vekove*, ed. Adam Stošić (Narodni Muzej Kruševac: Kruševac, 1972), 83. 81-92,

209 Radmila Tričković, “Kruševački Sandžakbegovi u 18. Veku,” 83.

210 Michael Ursinus, ed., *Grievance Administration (Sikayet) in an Ottoman Province: The Kaymakam of Rumelia's 'Record Book of Complaints' of 1781-1783* (RoutledgeCurzon: London and New York, 2005), 80.

211 Michael Ursinus, ed., *Grievance Administration (Sikayet) in an Ottoman Province: The Kaymakam of Rumelia's 'Record Book of Complaints' of 1781-1783*, 82.

212 Michael Ursinus, ed., *Grievance Administration (Sikayet) in an Ottoman Province: The Kaymakam of Rumelia's 'Record Book of Complaints' of 1781-1783*, 97.

213 Michael Ursinus, ed., *Grievance Administration (Sikayet) in an Ottoman Province: The Kaymakam of Rumelia's 'Record Book of Complaints' of 1781-1783*, 104.

214 Hivzija Hasandedić, trans., *Sidžil Nevesinjskog Kadije: 1767-1775. Godine*, 24.

village of Rabina.²¹⁵ These examples show that the Ottoman state attempted to provide safety to the peasantry by addressing their concerns with illegal appropriation of land and other property.

The Ottoman quest for economic prosperity demanded that the Empire expand its population and agriculture. The state sought to accomplish this through policies that upheld land rights, preserved the integrity of agricultural land, stimulated the creation of new agricultural land as well as provided increased security and other incentives in sparsely populated regions.

This chapter showed that the Ottoman Empire, in theory (i.e. economic ideas) and practice (i.e. imperial laws, policies, and actions) sought to bolster its agricultural and demographic position in the Western Balkans at the expense of forests. In the second chapter we will learn that these policies were not altogether effective and that the forests of the Western Balkans were, in fact, regrowing.

215 Hivzija Hasandedić, trans., *Sidžil Nevesinjskog Kadije: 1767-1775. Godine*, 25.

Chapter 2. Realities of Reforestation

The forests of the Western Balkans regenerated in the seventeenth and eighteenth centuries. We know this based on the fact that the region in this period experienced reductions in agricultural activity. Agricultural activity suffered for three main²¹⁶ reasons:

- 1) reductions in life security²¹⁷ due to corruption-caused rural depredation, an expensive series of conflicts with the Safavid, Habsburg and Russian states, and the influence of the Little Ice Age;
- 2) an increase in the significance of pastoralism at the expense of agricultural production in the Western Balkans;
- 3) geographical seclusion of the Western Balkans from major trade routes.

The general insecurity affected, above all, Ottomans who cultivated, traded, or shipped agricultural products. The shift from agriculture to pastoralism further decreased the Ottomans' need to clear forests as well as allowed many trees to regrow naturally. The geographical seclusion ensured that the Ottomans would not have a strong economic incentive to grow agricultural products, or to harvest trees for the purposes of international or inter-provincial trade. This chapter will initially expound on the three main reasons for (and indicators of) the agricultural decline, and then present evidence for the decline and regrowth of forests.

Diminishing Life Security

Agriculture in the Western Balkans weakened because of reductions in life security of people who cultivated, traded or shipped agricultural crops, and because of accompanying demographic contractions. These trends came about as a result of corruption-caused rural depredation, banditry, an expensive series of conflicts with the

216 Privileging one factor of agricultural decline over another is not useful here because the factors, as this chapter will reveal, worked together in a mutually reinforcing way.

217 A reduction of life security, in this case, also implies demographic contraction.

Safavid, Habsburg and Russian states, and the influence of the Little Ice Age. This section will briefly introduce these factors as well as examine their major consequences in regards to agricultural production.

Variable weather conditions associated with the Little Ice Age made life in the Ottoman Empire precarious. Moreover, any war- and brigandage-related depredation suffered by the *re'aya* was further exacerbated by hostile weather. In war or peace, the variable climate of the Little Ice Age tended to damage crops, downsize the total area of arable land, increase prices of crops, cause starvation, and offer peasants an incentive not to invest in weather-dependent agriculture. Sam White's research suggests that the Empire's provisioning and agricultural system collapsed at the end of the sixteenth century.²¹⁸ This is because the Empire prior to this collapse became dependent on the subsistence cultivation of marginal land.²¹⁹ Once climatic conditions worsened, this land was no longer available to cultivators, which created famines. In search of food, numerous peasants moved into towns, where they were faced with failing infrastructure, epidemics, and death.²²⁰ While cultivators of land were subsisting or dying in towns, agricultural production, as a result of internal and international conflicts, was not able to recover.²²¹ The competition for resources between individual *ayans* made the transportation of people and resources in our period very difficult.²²² This decline of the provisioning system would not have created conditions for a revival of agriculture.

Mula Mustafa Bašeskija's chronicle gives us insight into what the effects of the Little Ice Age looked like in the Western Balkans. According to Bašeskija, a drought in Sarajevo triggered rising prices of "wheat and other food" which brought "many troubles" for the poor in 1782.²²³ Wheat was also expensive a year later, also because of dry weather.²²⁴ In 1794, which was another dry year, Bašeskija notes that the lack of "rain or snow" prevented (crop) seeds from germinating and "dried out the seeds which

218 Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 52 and 120.

219 Ibid., 76.

220 Ibid., 275.

221 Ibid., 277-8. White's argument is by-and-large describing the situation in the Middle East, but, as this chapter, will demonstrate, the basic narrative holds true for the Western Balkans as well.

222 Ibid., 278.

223 Mula Mustafa Ševki Bašeskija, *Ljetopis*, 210. Bašeskija mentioned just a year earlier that "anyone with a family" was "suffering...due to failed crops...throughout the year." Ibid., 272.

224 Ibid., 219.

managed to come out.”²²⁵ “Everything got more expensive” during this drought.²²⁶ Another drought in 1772 slowed down flour production in windmills due to low river levels²²⁷, and yet another one in 1798 caused fruits trees to “dry out” and crops to “fail.”²²⁸ Excessively rainy weather could introduce additional food issues. A rainy period in 1786 made it “greatly unpleasant” for peasants to harvest their wheat.²²⁹ Heavy rains would at time lead to floods which could damage water mills and harm crops.²³⁰ Bašeskija also tells us that cold weather posed a great threat to agriculture. While cold weather could “freeze” vegetables such as “cabbage”²³¹ and cause “many sheep, goats, [and] calves” to die,²³² hail could “ruin crops,” prevent tree fruiting and cause wheat price to increase.²³³ Snowy and rainy weather in Sarajevo, according to Bašeskija, was related to “skinny livestock” and, seemingly, expensive hay.²³⁴ Foul weather of the Little Ice Age was connected to the price of food and well-being of Sarajevo's inhabitants. The numerous peasants who became climate refugees in nearby towns, as White would expect, were the first to bear the burden of infectious diseases. In the early 1760s, the plague in Sarajevo lasted for three years and, in Bašeskija's estimate claimed the lives of “15,000 souls.”²³⁵ This disease wave, we learn, “initially started spreading among the poor in the town periphery.”²³⁶ In 1783, Bašeskija believes, another 8,000 people died from the plague. “Children of the poor” suffered most.²³⁷ While these appear to be the two largest disease outbreaks in Sarajevo, there were many others in the intervening years. Bašeskija's chronicle is consistent with Sam White's argument. Foul weather affected agricultural output by harming crops and damaging infrastructure such as water

225 Ibid., 314.

226 Ibid., 314.

227 Ibid., 115.

228 Ibid., 334.

229 Ibid., 246. For a similar case see Ibid., 98.

230 Such rain events occurred in 1768, 1784, and 1792. See Ibid., 74, 234, 297. The floods in 1736 and 1737 especially harmed east Bosnia, where crops were damaged and bridges on the Drina ruined. See Enes Pelidija, *Banja lučki Boj iz 1737: Uzroci i Posledice*, 254-5.

231 Mula Mustafa Ševki Bašeskija, *Ljetopis*, 174.

232 Ibid., 203.

233 Ibid., 114. The harsh winter of 1595-6 also led to a famine, first in Bosnia, and then along the Hungarian frontier. See Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 145. In the early 1700, another freezing winter was followed by a famine and plague in what is today Serbia. See Ibid., 222.

234 Mula Mustafa Ševki Bašeskija, *Ljetopis*, 304.

235 Ibid., 55.

236 Ibid., 55.

237 Ibid., 218-9.

mills and bridges.²³⁸ The resultant high prices made the lives of the poor even more precarious and susceptible to diseases such as the plague. Towns, or “urban graveyards” as White calls them, became the places where many climate refugees would find their end, feeding into the significant demographic contraction that we see in the long seventeenth century. McGowan estimates that Rumelia lost “more than half its population from the late sixteenth to the early eighteenth centuries, before recovering somewhat by 1800.”²³⁹ Even in 1830 the Ottoman Empire's population density appears to have been lower than that what it had been in the late 1580s.²⁴⁰ The general demographic decline meant that there were fewer people who could cultivate land, and also that there were fewer people in the Empire who would eat food grown on land. The Little Ice Age, by affecting in this way both the supply of and demand for food, was supportive of forest regrowth.

Wars, banditry, and governmental corruption, generally speaking, were strongly linked in the Western Balkans in the seventeenth and eighteenth centuries. Wars were destructive, disruptive, and expensive.²⁴¹ Starved for cash and reliant on tax farms,

238 Peçevi informs us that a bridge on the Morava collapsed due to ice. See Ibrahim Alajbegović Pečevića, *Historija 1576-1640*, 215.

239 Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 206. White is quoting Bruce McGowan, . See “Age of the Ayans, 1699–1812,” in *An Economic and Social History of the Ottoman Empire*, ed. H. Inalcik and D. Quataert (New York: Cambridge University Press, 1994), 652. Zirojević's claim that we see demographic growth in what is today Serbia after 1740s is consistent with White's and McGowan's arguments. See Olga Zirojević, *Srbija pod Turskom Vlašću (1450-1804)*, 137. Şevket Pamuk's analysis of the Ottoman Empire as a whole also suggests demographic stagnation. His estimates are 21.3 million people in 1600, 20.2 million in 1650, 20.4 million in 1700, 19.8 million in 1750, and 21.5 million in 1800. See footnote 34 in K. Kivanc Karaman and Şevket Pamuk, “Ottoman State Finances in European Perspective, 1500–1914,” 607. This demographic trend of initial decline and eventual stagnation is also adopted by Machiel Kiel in his essay on Bosnia. See Machiel Kiel, “Ottoman Sources for the Demographic History and Islamization of Bosnia,” 93–119, in *A History in Peril* (Madison: University of Wisconsin Press, 2004), 105. Enes Peledija estimates that the Bosnian *sancak* lost about 30% of its total populace between 1732 and 1737 due to plague, wars, and migrations. See Enes Peledija, *Banjalučki Boj iz 1737: Uzroci i Posledice*, 300.

240 Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 227.

241 Şevket Pamuk writes about large budget deficits, debasements of coin, and price ceilings that the Ottoman economy and trade suffered due to wars of the eighteenth century. See Şevket Pamuk, *A Monetary History of the Ottoman Empire* (New York: Cambridge University Press, 2000), 196–7. Pamuk also writes about fiscal difficulties in the last third of the seventeenth century. K. Kivanc Karaman and Şevket Pamuk, “Ottoman State Finances in European Perspective, 1500–1914,” 607. McGowan writes about economic downturns due to wars as well. See Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 439, 467 and 497.

Istanbul found it difficult to address illegal behaviour of tax collectors, who often were not official tax farmers, but their sub-contractors.²⁴² At every level of the tax chain, there was often someone who tried to maximize his profits at the expense of the *re'aya*.²⁴³ Because *ayans* were crucial to the Ottoman war effort, Istanbul was also frequently forced to tolerate their skirmishes and illegal behaviour.²⁴⁴ This was also true of some brigands. Once a war was over, unemployed soldiers frequently turned to brigandage as a source of income.²⁴⁵ Some brigands were powerful enough to become state officials.²⁴⁶ Peasants and even entire villages turned to banditry,²⁴⁷ which are examples of illegal behaviour emerging from other sources of regional insecurity.

War was an essential factor in making the region insecure. The War of the Holy League (1683–1698), for example, disrupted regional trade,²⁴⁸ stopped two, otherwise

242 Fikret Adanir, "The Ottoman Peasantries, c. 1360-c.1860," 296. Also see K. Kivanc Karaman and Şevket Pamuk, "Ottoman State Finances in European Perspective, 1500–1914," 602-603.

243 Frederick F. Anscombe, "Albanians and "Mountain Bandits,"" in *The Ottoman Balkans 1750-1830*, ed. Frederick F. Anscombe (Princeton: Markus Wiener Publishers, 2006), 95. For tax on depletion of teeth see Olga Zirojević, *Srbija pod Turskom Vlašću (1450-1804)*, 108. In the *sicil* of Mostar, we learn about one example where *cizye* was illegally extracted from an individual. See Mujić, Muhamed A., trans. *Sidžil Mostarskog Kadije 1632-1634*, 62. Also see Avdo Sućeska, *Ajani: Prilog Izučavanju Lokalne Vlasti u Našim Zemljama za Vrijeme Turaka*, 187. As well as Frederick F. Anscombe, "Albanians and "Mountain Bandits," 95. Also see Virginia H. Aksan, "Whose Territory and Whose Peasants? Ottoman Boundaries on the Danube in the 1760s," in *The Ottoman Balkans 1750-1830*, ed. Frederick F. Anscombe (Princeton: Markus Wiener Publishers, 2006), 65, 68,

244 Anscombe writes about the Ottoman Empire of the second half of the eighteenth century: "Istanbul inadvertently fostered additional turmoil in the provinces by supporting the authority of local notables and officials capable of supplying the army's critical needs, regardless of the means they used to raise resources." See Frederick F. Anscombe, "The Balkan Revolutionary Age," *The Journal of Modern History* Vol 84 (September 2012), 576. Also see Frederick F. Anscombe, "Albanians and "Mountain Bandits," 96-7. For examples of *ayans'* usurpation of land see Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 278-280.

245 Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 433. Also see Michael R. Hickok, "Homicide in Ottoman Bosnia," in *The Ottoman Balkans 1750-1830*, ed. Frederick F. Anscombe (Princeton: Markus Wiener Publishers, 2006), 51-55.. Virginia H. Aksan, "Whose Territory and Whose Peasants? Ottoman Boundaries on the Danube in the 1760s," 67. Brigandage in the Western Balkans reached its peak in the last quarter of the eighteenth century. See Bruce McGowan, *Economic Life in the Ottoman Empire*, 150.

246 An example is Kara Feyzi, who became an *ayan* in 1805. See Tolga Esmer, "Economies of Violence, Banditry and Governance in the Ottoman Empire Around 1800," 195.

247 Zirojević speaks about "Serbia" in this case. See Olga Zirojević, *Srbija pod Turskom Vlašću (1450-1804)*, 59.

248 Beyond actual war, even the threat of war was enough to depress trade in the *sancak* of Bosnia. See Enes Pelidija, *Banjalučki Boj iz 1737: Uzroci i Posledice*, 258.

wood-consuming, mines from operating and forced a large number of Ottoman populace to relocate outside the region.²⁴⁹ Most towns from Belgrade to Skopje were burned down at that time.²⁵⁰ Throughout our period the Empire was either engaged in frequent border skirmishes, or in disruptive large-scale wars similar in scale to the War of the Holy League: the Long Turkish War (1593-1606), the Austro-Russian-Turkish War (1735-1739) and the Austro-Turkish War (1787-1791). Even battles outside the Western Balkans were able to affect the region's demographic trends and economic security. Somewhere between six and seven thousand Bosnian Ottomans lost their lives in the battle for the fortress of Ochakiv in Crimea in 1737.²⁵¹ Of 5,200 soldiers who went to fight against Persia in 1727 only 500 returned home to the *sancak* of Bosnia.²⁵² According to some estimates, as many as 20,000 Bosnian fighters lost their lives between 1727 and 1737, in wars against Russia and Persia.²⁵³ Ottoman wars, the Empire's need to militarily compete with the Habsburgs and Russia, as well as the competition between individual *ayans* to obtain larger armies and better weaponry led provincial statesmen to illegally extract additional revenue from the already suffering *re'aya*.²⁵⁴

Similarly, frequent brigands' attacks inhibited trade, disrupted agricultural production and drained state resources, sometimes "destroying whole villages...and killing...hundreds of people at a time."²⁵⁵ From the 1590s forward, as the *timar* system crumbled and as the state needed to recruit more and more peasant mercenaries into its infantry, the number of brigands in the Ottoman Empire swelled each time after these large groups of infantrymen were dismissed from duty.²⁵⁶ This circumstance made it exceptionally life-threatening for merchants, or for anyone else, to travel.

249 Tatjana Katić, "Suvozemni Put od Beograda do Vidina: Prema Dnevniku Pohoda Mustafa Paše Ćuprilovića 1690. Godine," *Istorijski Časopis*, XLVII (2000): 111 and 114.

250 Olga Zirojević, *Srbija pod Turskom Vlašću (1450-1804)*, 80-93.

251 Enes Peledija, *Banjalučki Boj iz 1737 Uzroci i Posledice* (Sarajevo: El-Kalem, 2003), 223.

252 Peledija also mentions that other parts of the Empire were experiencing similar losses as a result of this war. *Ibid.*, 42-3.

253 *Ibid.*, 293. These references are likely related to the Ottoman–Persian War (1730–35) and the Russo-Turkish War (1735–1739).

254 Avdo Sućeska, "Promjene u Sistemu Izvanrednog Oporezivanja u Turskoj u XVII Vijeku i Pojava Nameta Tekalif-i Sakka," *Prilozi za Orijentalnu Filologiju* 10-11 (1960-1): 93.

255 Fikret Adanir, "Semi-autonomous forces in the Balkans and Anatolia" in *The Cambridge History of Turkey Vol. 3: The Later Ottoman Empire, 1603–1839*, ed. Suraiya Faroqhi (Cambridge and New York: Cambridge University Press, 2006), 178.

256 Fikret Adanir, "The Fikret Adanir, "The Ottoman Peasantries, c. 1360-c.1860," *Ottoman Peasantries, c. 1360-c.1860*," 295 and 305. Fikret Adanir, "Tradition and Rural Change in

For example, Çelebi's travels through the region in the 1680s depict how dangerous it was to travel at that time. He informs us that *hayduks* wounded a "hero" in Çelebi's company while managing to steal a horse. During this trip, Çelebi's company was not feeling safe. They had to be "vigilant," "careful," and "armed."²⁵⁷ He also mentions the fear his company had to cope with while travelling.²⁵⁸ Tactics for navigating the road connecting Niš and Belgrade, "*hajduks'* nest,"²⁵⁹ or the vicinity of the town of Kočane, where "not even a bird could make a safe passage"²⁶⁰ without sleeping in designated residences, included employing additional armed men²⁶¹ that would accompany Çelebi's group on the dangerous segment of the road, embarking on a detour,²⁶² or making a clearing in a forest in order to secure the group's bivouac.²⁶³ Çelebi's experience shows that a safe passage through the Western Balkans demanded elite status, money, and time, or in other words, resources which would not have been available to the bulk of the travellers. The provincial record of complaints (*sicil*) from Manastir for the period between 1781 and 1783 lists 28 travel-related murders, 3 of which were related to trading.²⁶⁴ The Manastir perspective is important because the district is near road networks running across the Western Balkans. Bašeskija is also aware of at least 33 Sarajevo residents being killed on the road between 1771 and 1799.²⁶⁵ In 1793, Bašeskija wrote, Mula-efendi went to Dubrovnik hoping to avoid the "bandits of Rumelia."²⁶⁶ The road to Dubrovnik, however, did not prove to be safer: "Mula-efendi's horse lost footing due to steep and rocky roads around Dubrovnik," the fall killing the traveller.²⁶⁷ The Nevesinje *sicil* for the years 1767 to 1775 continuously refers to *fermans* meant to ensure that political elites in this *kadilik* take measures

Southeastern Europe During Ottoman Rule," in *The Origins of Backwardness in Eastern Europe*, ed. Daniel Chirot (University of California Press: Berkeley, Los Angeles and London, 1989), 142. Robert Mantran, trans. Ema Miljković-Bojanić, *Istorija Osmanskog Carstva* (Belgrade: Clio, 2002), 396.

257 Evlija Čelebi, *Putopis*, trans. Hazim Šabanović (Sarajevo: Svjetlost, 1967), 309.

258 *Ibid.*, 475, 479, 484.

259 *Ibid.*, 65. Hajduk means brigand.

260 *Ibid.*, 345.

261 *Ibid.*, 345.

262 *Ibid.*, 479.

263 *Ibid.*, 484.

264 Mujić, Muhamed A., trans. *Sidžil Mostarskog Kadije 1632-1634*, 66, 77, 88, 95-96, 98, 102, 105, 113, 119, 138, 155-6, 159-61, 164, 167-8, 176.

265 Mula Mustafa Ševki Bašeskija, *Ljetopis*, 105, 111, 208, 236-7, 247-8, 258-9, 286, 292, 311, 316, 322-3, 327, 336-8, 347.

266 *Ibid.*, 311.

267 *Ibid.*, 311.

against Montenegrin and local *hayduks*, and work to ensure safety for travellers.²⁶⁸ While the *sicil* does not make it clear whether these measures were ever implemented or successful, it does indicate that security issues were on the rise because more and more of the local *re'aya* were turning towards banditry.²⁶⁹ Travelling in the Western Balkans carried a fatal risk.

Sources of corruption were numerous. Imperial policies were often inconsistent and at times severely affecting the *re'aya's* ability to cultivate land. The grand vizier Koca Yusuf Pasha (1730-1800) in the late eighteenth century noticed the peasants' plight, writing that the *malikane* system (life-time tax-farming), originally instituted to encourage tax farmers to invest in the agricultural production of their administrative zones, succumbed to the "general disease existing in the nature of bureaucracy."²⁷⁰ The *re'aya's* tax burden became high after the Cretan War (1645–1669), which forced many of them to borrow money.²⁷¹ A century later, Bašeskija wrote about war levies and how they "drained" the people.²⁷² At one time two peasants from Sarajevo who failed to pay the tax were "strangled."²⁷³ Bašeskija saw "sin and violence" in how the poor were treated in Sarajevo,²⁷⁴ while also noting that "many people see evildoing towards the *re'aya* as a duty."²⁷⁵ This violent duty was also shared by local *pashas* in the 1750s.²⁷⁶ On a number of occasions Bašeskija suggests that debt was a reason for death of Sarajevo's destitute individuals.²⁷⁷

The overall decline in regional demographic density contributed to the plight of the poor. The most significant contributor was Istanbul's insistence that its tax base was not shrinking. This meant that tax collectors from a town such as Manastir were responsible to keep collecting in the town the same amount of money year after year

268 Hivzija Hasandedić, trans., *Sidžil Nevesinjskog Kadije: 1767-1775. Godine*, 11, 20, 27-8, 36-9, 41-2, 72-3, 75.

269 Ibid., 36-7, 73, 75. Interestingly, about a century earlier Çelebi also reports that on the road from the fields of Nevesinje to the town of Blagaj his company encountered "myriad troubles" with local bandits and their helpers. See Evlija Čelebi, *Putopis*, 452.

270 Cited in Fatih Emriš, *A History of Ottoman Economic Thought*, 138.

271 Avdo Sućeska, "Promjene u Sistemu Izvanrednog Oporezivanja u Turskoj u XVII Vijeku i Pojava Nameta Tekalif-i Sakka," 86-7.

272 Mula Mustafa Ševki Bašeskija, *Ljetopis*, 268.

273 Ibid., 115.

274 Ibid., 252.

275 Ibid., 154.

276 Ibid., 31.

277 For examples, see Ibid., 298, 299, and 340.

even though the town lost many of its inhabitants.²⁷⁸ In 1634, the town's Christian populace was to pay the tax for 4207 households, while it was found that 800 (19%) of those households were abandoned.²⁷⁹ In 1641, Manastir's authorities held the town responsible to pay taxes for 4428 households even though the local court declared that 1000 households (23%) were "defunct."²⁸⁰ Tax over-assessments were especially frequent between 1600 and 1650.²⁸¹ A similar situation in the *sancaks* of Bosnia and Herzegovina led the locals to stage uprisings in 1718 and 1737.²⁸²

Istanbul's inconsistency, resulting out of bare pragmatism, meant that brigand leaders such as Kara Feyzi could become *ayans* and important regional power brokers.²⁸³ Likewise, at the end of the eighteenth century the Empire was forced to embrace the presence of Janissaries in Belgrade even though they were usurping land from the peasantry.²⁸⁴ The state's pursuit of its short-term, or even momentary, goals tended to intensify the precariousness of peasants in the Western Balkans.

As insecurity and tax pressures increased and became unpredictable, migrations into non-Ottoman lands decreased population densities across the Western Balkans.²⁸⁵ Three notable movements of people are the three "great" migrations of Orthodox populace (1690s, 1739, and 1788-1790)²⁸⁶ from what is today northern Macedonia, Kosovo, and southern Serbia to what is today central Serbia, and Habsburg-controlled northern Serbia (i.e. Vojvodina), and Hungary. It is estimated that 37,000 people

278 Bruce McGowan, *Economic Life in the Ottoman Empire*, 132-133.

279 Ibid.

280 Ibid.

281 Linda Darling, *Revenue-Raising and Legitimacy: Tax Collection and Finance Administration in the Ottoman Empire, 1560-1660*, 261. Coincidentally, this period is also a period of strong inflation in the Ottoman Empire, the period in which prices in Istanbul increased by up to five times. See Şevket Pamuk, *A Monetary History of the Ottoman Empire*, 237. The Empire's deliberate policy of currency debasements was an important factor when it came to creating this inflation in the first place. The central treasury benefited every time it had to pay its servants, military or otherwise, with debased coinage. Ibid., 125.

282 Enes Pelidija, *Banja lučki Boj iz 1737: Uzroci i Posledice*, 68.

283 Tolga Esmer, "Economies of Violence, Banditry and Governance in the Ottoman Empire Around 1800," 24.

284 Robert Zens, "In the Name of the Sultan: Haci Mustafa Pasha of Belgrade and Ottoman Provincial Rule in the Late 18th Century," *International Journal of Middle East Studies* 44:1 (2012), 11-2.

285 Wolf-Dieter Hütteroth, "Ecology of the Ottoman Lands," 32.

286 Wayne Vuchnic, "The Nature of Balkan Society under Ottoman Rule," *Slavic Review* 21 (December 1962), 612. Also see Dušan S. Simeunović, *Uzroci Nestajanja Šuma u Srbiji u XIX Veku*, 60.

migrated in the first wave alone.²⁸⁷ Some estimates suggest that up to 200,000 people migrated to Habsburg lands from Ottoman Serbia in the eighteenth century.²⁸⁸ In 1697 about 40,000 Catholics followed the Duke of Savoy as he retreated into the Habsburg Empire.²⁸⁹ The Venetian republic also received migrants from Ottoman Hercegovina and Croatia. During our period, between 20,000 and 30,000 migrants moved into Dalmatia.²⁹⁰ While demographic densities of Ottoman Kosovo and Bosnia increased due to an influx of, respectively, Albanians and Ottomans fleeing from Hungary, the overall migratory trend for the Western Balkans meant that the region was demographically contracting.

War, climate, banditry, and state corruption played a significant role in making the lives of the *re'aya* less secure. These trends brought death, famine, and disease to the peasantry, while also encouraging their migration. This meant that agriculture of the Western Balkans would suffer along with the peasants.

Growth of Pastoralism.

Pastoralism in the Western Balkans in the seventeenth and eighteenth centuries was growing at the expense of agriculture.²⁹¹ Since the Ottoman state offered insufficient protection from banditry and wars to sedentary land cultivators of the Western Balkans, a more mobile²⁹² form of capital --livestock--became the main generator of income for the region.²⁹³ Transport costs for livestock were much lower than transport costs for inert and heavy agricultural crops. Livestock could also provide peasants with food if harvests

287 Antonina Zhelyazkova, "Islamization in the Balkans as an Historiographical Problem: The Southeast-European Perspective" in *The Ottomans and the Balkans*, ed. Fikret Adanir and Suraiya Faroqhi (Brill: Leiden, Boston and Koln, 2002), 237 and 238. It must be noted that Kosovo, a productive agricultural valley, was then populated by Albanian stockbreeders.

288 Bruce McGowan, *Economic Life in the Ottoman Empire*, 90.

289 Enes Pelidija, *Banjaški Boj iz 1737: Uzroci i Posledice*, 89.

290 Mirela Slukan Altić, "Prirodni i Kulturni Pejzaži Pokrčja u Mletačkim Katastrima 1709./1711., *Ekonomika i Ekohistorija* 4 (October 2008), 105.

291 This section will present some evidence of agricultural decline. In fact, all sections of this chapter, in their own way, point to the validity of this argument.

292 Jelena Mrgić, "Wine or Raki—The Interplay of Climate and Society in Early Modern Ottoman Bosnia," 630.

293 Hütteroth also states that "during the eighteenth and nineteenth centuries *çiftlik*-holders increasingly concentrated on animal breeding." See Wolf-Dieter Hütteroth, "Ecology of the Ottoman Lands," 30.

fail due to the unfavourable and unpredictable weather conditions of the Little Ice Age.²⁹⁴ These circumstances would have been a significant contributor to the advantage in profitability that regional livestock growers had over agriculturalists. The rest of this section will elaborate on this while also arguing that the increased rearing of cattle in general, and of pigs specifically, created conditions favourable to forest regrowth.

Weak agriculture was accompanied by an expansion in pastoralism in the *sancak* of Smederevo in the seventeenth century.²⁹⁵ The *sancak* specialized in the export of leather products, hide,²⁹⁶ wool,²⁹⁷ and, from the 1650s, of cattle itself.²⁹⁸ The *sancak*'s tax records suggest that livestock numbers increased from 180,000 animals in 1703 to 1,200,000 animals in 1710.²⁹⁹ Main exports from the Bosnia *sancak* in the middle of the eighteenth century, next to wax, were hides and wool.³⁰⁰ Çelebi's travelogue also depicts the pastoral potential of the Bosnian *sancak*. He notes that 2,000 animals were daily

294 Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 71-72 and 210.

295 Olga Zirojević, *Srbija pod Turskom Vlašću (1450-1804)*, 72-3. Adanir explains that only a "tiny portion of the land..." [in the paşalık of Belgrade] was under cultivation" in the late eighteenth century. At the same time he singles out the breeding of pigs as an important economic activity. See Fikret Adanir, "The Ottoman Peasantries, c. 1360-c.1860," 320. He also writes about the "general trend in agriculture away from arable farming to livestock raising" in the Balkans. See Fikret Adanir, "Tradition and Rural Change in Southeastern Europe During Ottoman Rule," 145. Only about 0.05% of Ottoman total assets were invested in agricultural production. This was because agriculture was not as profitable as other economic activities. See Suraiya Faroqhi and Gilres Veinstein, *Merchants in the Ottoman Empire*, 188-9.

296 Buffalo, cattle, and sheep hide were popular trading commodities. McGowan informs us that in 1628, "50,000 buffalo and cattle hides were collected at Novi Pazar when a dispute with Ottoman customs officials took place." See Bruce McGowan, *Economic Life in the Ottoman Empire*, 41.

297 McGowan writes that "wool is...easy to transport [and] requiring little labour." This is another factor in the cost-effectiveness of pastoralism, and especially so in regions as hilly and mountainous as the Western Balkans. See Bruce McGowan, *Economic Life in the Ottoman Empire*, 38. Maximum production of wool in the Morava and Kosovo valleys took place in the period between 1620 and 1667. See Bruce McGowan, *Economic Life in the Ottoman Empire*, 41.

298 Olga Zirojević, *Srbija pod Turskom Vlašću (1450-1804)*, 73 and 146. The *sancak*'s cattle reached Dalmatia via Bosnia. See Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 684. Faroqhi reports that Dubrovnik imported sheep and cattle from Bosnia in 1623/4. See Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 511.

299 Olga Zirojević, *Srbija pod Turskom Vlašću (1450-1804)*, 111.

300 This is confirmed by my reading of the Bosnian *defter* of 1604. The *defters* enumerates numerous instances of livestock rearing across the *sancak*. Other Bosnian exports included bear, fox, and wolf fur. While further below I will show that the growth of pastoral activity at the expense of agricultural activity in the Western Balkans contributed to forest regrowth, the last three commodities show that Bosnia had enough forests to allow for an export of wild-animal fur. See Enes Pelidija, *Banjalučki Boj iz 1737: Uzroci i Posledice*, 106.

butchered in Sarajevo for local consumption alone, and that the town once a year slaughtered another 40,000 animals.³⁰¹ The town also annually butchered and cured “several thousand heads of cattle.”³⁰²

Pigs are a renewable and mobile source of food that is rich in fat and protein.³⁰³ Pigs also breed very fast, eat rotting food waste, and can be slaughtered young.³⁰⁴ From the 1760s the *pašalık* (i.e. province) of Belgrade became a significant exporter of pigs.³⁰⁵ By the end of the century Stoianovich reports that every household in the Šumadija district possessed between 20 and 200 pigs.³⁰⁶ In the *sancak* of Bosnia's *nahiya* of Tuzla, the rearing of pigs was increasing even in the second half of the sixteenth century.³⁰⁷ Mrgić believes that even at that time, Christians were likely turning towards profitable “animal husbandry” to compensate for the “shortfalls in the cash crop production.”³⁰⁸ Some agricultural land was transformed to pastoral by illegal means. For example, one Rumelian 'justice decree' from 1609 suggests that military strongmen tended to usurp land holdings and then convert them to “livestock raising.”³⁰⁹

Ottoman subjects had a strong incentive to engage in animal husbandry: profitability. Moačanin reports that a document produced by a *sancakbey* suggests that the rearing of pigs in the Podravina region of the *sancak* of Požega was profitable in the

301 I believe he is referring either to sheep or goats, or to both. See Evlija Čelebi, *Putopis*, 122.

302 Evlija Čelebi, *Putopis*, 122.

303 Umberto Albarella, Keith Dobney, Anton Ervynck, and Peter Rowley-Conwy, eds., *Pigs and Humans: 10,000 Years of Interaction* (New York: Oxford University Press, 2007), 99.

304 Umberto Albarella, Keith Dobney, Anton Ervynck, and Peter Rowley-Conwy, eds., *Pigs and Humans*, 99. Pigs are able to double their birth weight much faster than other livestock. Compared to other types of livestock, pigs require less energy per kilogram of their own body weight to double their birth weight. See John R. Campbell, M. Douglas Kenealy, Karen L. Campbell, *Animal Sciences: The Biology, Care and Production of Domestic Animals* (Long Grove, IL: Waveland Press Inc., 2010), 212. It should be noted that this data was derived from modern and not from historic breeds.

305 The main sources of demand for these types of export were the Habsburg Empire and Dalmatia. See Traian Stoianovich, “The Conquering Balkan Orthodox Merchant,” 282. Stoianovich's statement is likely based on the written notes of Vuk Stefanovic Karadzic. See Branislav Djurdjev and Milan Vasić, eds., *Jugoslovenske Zemlje pod Turskom Vlašću (do Kraja XVIII Stoljeća): Izabrani Izvori*, 187.

306 Traian Stoianovich, “The Conquering Balkan Orthodox Merchant,” 282.

307 Jelena Mrgić, “Wine or Raki - The Interplay of Climate and Society in Early Modern Ottoman Bosnia,” 630. Also see Jelena Mrgić, *Severna Bosna: 13.-16. vek*, 29 and 278.

308 Jelena Mrgić, “Wine or Raki - The Interplay of Climate and Society in Early Modern Ottoman Bosnia,” 630.

309 Bruce McGowan, *Economic Life in the Ottoman Empire*, 65.

seventeenth century.³¹⁰ Vuk Stefanović Karadžić (1787-1864), a Serbian philologist, found that “cattle and pig” rearing was more profitable than viticulture, production of *raki*, or production of “various fruits of the land.”³¹¹ In his view, it was the presence of forests and the ability of traders to sell animals at any time of the year that made cattle and pig rearing economically alluring.³¹² Karadžić's assessment is in agreement with McGowan's assertion that “at least until the Napoleonic period arable land was not very valuable in Ottoman Europe.”³¹³ For example, western Macedonian meadows were worth more than comparable tracts of arable land.³¹⁴

Land dedicated to the cultivation of agricultural crops would have contained fewer trees³¹⁵ than land dedicated to pastoralism. I will argue that this holds true for livestock in general, and pigs in particular. To obtain good yields, land cultivators needed to keep their crops out of shade. This meant not only that the land area sown by crops had to be clear of trees, but also that any trees casting shade from outside the sown area had to be cut down. As agricultural production gave way to pastoralism in the Western Balkans, livestock grazing would have still been an obstacle to the regrowth of trees on empty land. The principle of ecological succession, however, gives savanna-type ecosystems a way of regenerating tree groves.³¹⁶ The (approximate) pathway for this to happen is the following:

- 1) a complete grassland is formed, either through the agency of humans, fire, wind, landslide, or disease;
- 2) livestock starts grazing in the area;

310 Nenad Moačanin, “Pristup Ekohistoriji Podravine Prema Osmanskim Izvorima.” *Ekonomska i Ekohistorija* 1 (2005), 145.

311 Branislav Djurdjev and Milan Vasić, eds., *Jugoslovenske Zemlje pod Turskom Vlašću (do Kraja XVIII Stoljeća): Izabrani Izvori*, 187.

312 Branislav Djurdjev and Milan Vasić, eds., *Jugoslovenske Zemlje pod Turskom Vlašću (do Kraja XVIII Stoljeća): Izabrani Izvori*, 187.

313 Bruce McGowan, *Economic Life in the Ottoman Empire*, 69.

314 Bruce McGowan, *Economic Life in the Ottoman Empire*, 69.

315 Agricultural production also demanded that a certain portion of its land-base be dedicated to pastoralism. This is because livestock was used to pull the plough.

316 This concept is explained in detail in F.W.M. Vera, *Grazing Ecology and Forest History* (Oxon, UK: CABI Publishing, 2000). and Ian D. Rotherham, ed., *Trees, Forested Landscapes and Grazing Animals: A European Perspective on Woodlands and Grazed Treescaping* (New York: Routledge, 2013).

- 3) a thorny bramble or a herbaceous plant defended by a poisonous chemical grows somewhere on the grassland;³¹⁷
- 4) the presence of these plants shields a hornbeam, hazel, hawthorn, or another similar sapling from browsing;³¹⁸
- 5) Once hornbeam grows taller than the bramble, livestock starts browsing on it, and as a response, the hornbeam tree develops a hedge-like structure.³¹⁹ The advantage that a hazel tree would have is that it can clone itself easily, forming thickets.³²⁰ Hawthorn has thorns which protect it from browsing.
- 6) Short-lived trees such as hazel, hawthorn, and hornbeam become “nurse trees” (i.e. they start protecting long-lived trees such as beech and oak³²¹ from browsing);
- 7) Once oak, beech, or even hornbeam reach two meters in height, they can keep growing without any protection from “nurse” trees.³²²

317 Oliver Rackham, “Woodland and Wood-Pasture” in *Trees, Forested Landscapes and Grazing Animals: A European Perspective on Woodlands and Grazed Treescapes*, ed. Ian D. Rotherham (New York: Routledge, 2013), 16.

318 Frans Vera, “Can’t See the Trees for the Forest” in *Trees, Forested Landscapes and Grazing Animals: A European Perspective on Woodlands and Grazed Treescapes*, ed. Ian D. Rotherham (New York: Routledge, 2013), 109-110.

319 Tomasz Samojlik and Dries Kuijper, “Grazed Wood-Pasture versus Browsed High Forests” in *Trees, Forested Landscapes and Grazing Animals: A European Perspective on Woodlands and Grazed Treescapes*, ed. Ian D. Rotherham (New York: Routledge, 2013), 149.

320 Frans Vera, “Can’t See the Trees for the Forest,” 113.

321 Oak seedlings themselves are not palatable to livestock, and can also regrow from their roots if the tip is bitten off. Della Hooke, “Re-wilding the Landscape” in *Trees, Forested Landscapes and Grazing Animals: A European Perspective on Woodlands and Grazed Treescapes*, ed. Ian D. Rotherham (New York: Routledge, 2013), 41-2. Oak is most frequently seen in pastured woodlands. See Frans Vera, “Can’t See the Trees for the Forest,” 110-111.

322 Tomasz Samojlik and Dries Kuijper, “Grazed wood-pasture versus browsed high forest,” Tomasz Samojlik and Dries Kuijper, “Grazed Wood-Pasture versus Browsed High Forests,” 150. Also see Frans Vera, “Can’t See the Trees for the Forest,” 113.

- 8) Livestock continues to graze around the new grove of trees, and in this way, clears the area of low-lying shrubs and plants (which can also act as fuel during a forest fire).³²³

This ecological pathway suggests that pastoralism was more supportive of tree regrowth than cultivation of land would have been. Any reduction in livestock numbers due to disease or environmental factors on a given field would also have resulted in more seedlings being allowed to reach the requisite two meter height.³²⁴

Our primary sources can also speak to this ecological framework. Çelebi observed during his travels the connection between treed landscapes and grazing areas. For example, he noticed that near Bijeljina, a town in the *sancak of Zvornik*, there was a “woodland” whose “trees are as tall as the sky.” “Thousand sheep can graze,” Çelebi reports, “in the thick shade of each tree.”³²⁵ Here Çelebi observes that 1) sheep indeed can graze in a wooded area, 2) the wooded area contains a herbaceous layer³²⁶ that sheep can graze on, and that 3) these trees are quite large. The size of these trees, the presence of a herbaceous layer,³²⁷ and the possibility of thousand sheep grazing around the trunk indicate that these trees were spaced relatively far apart from each other. This is exactly the type of landscape described by the aforementioned ecological pathway. Similarly, while travelling through the *sancak* of Kyustendil, Çelebi noted that the area had many “fattened sheep and goats” because local forests are rich in hornbeam.³²⁸ Çelebi here links the abundance of a specific tree species with successful pastoral activity.

As previously noted, periodic reduction of livestock numbers would have allowed for waves of new saplings to be successfully established in the ground. A decline in

323 Caroline Bostrom et al., “Forest and Land Management Options to Prevent Unwanted Forest Fires” in *Trees, Forested Landscapes and Grazing Animals: A European Perspective on Woodlands and Grazed Treescapes*, ed. Ian D. Rotherham (New York: Routledge, 2013), 183.

324 Luke Steer, “Treescapes: Trees, Animals, Landscape, People, and 'Treetime'” in *Trees, Forested Landscapes and Grazing Animals: A European Perspective on Woodlands and Grazed Treescapes*, ed. Ian D. Rotherham (New York: Routledge, 2013), 289.

325 Evlija Čelebi, *Putopis*, 479.

326 This layer could have contained grass, clover, and similar vegetation.

327 For a herbaceous vegetation to flourish in a treed landscape, trees would need to be spaced apart far enough to allow sunlight to reach the ground.

328 Evlija Čelebi, *Putopis*, 572.

livestock numbers, our sources tell us, stemmed from disease and climatic factors. Rinderpest, anthrax, or another disease caused a “great plague among livestock” that “swept across the Empire” in the early 1590s.³²⁹ In 1761 Bašeskija writes about a “disease among animals” and the accompanying “stench of dead cows.”³³⁰ Nine years later he suggests that animals were “weak.”³³¹ A “plague” struck “small and large livestock” in Sarajevo in 1773.³³² In 1789, Bašeskija believed that “some livestock” died from “asthma.”³³³

Cold weather helped “spread animal infections” in fourteenth-century northern Europe, in the sixteenth-century Kingdom of Naples, and in 1870s Anatolia.³³⁴ The Little Ice Age brought highly variable climatic conditions to the Western Balkans, conditions which would have contributed to an increase in livestock infections. In 1571 “many animals” were found frozen in Bulgaria and Anatolia.³³⁵ In the 1590s “mist and snow” around Belgrade, according to the writings of a grand vizier, made animals “weak” and “barely” able to “get up.”³³⁶ The historian Lajos Racz reports that cattle in many parts of Hungary in 1598 was infected by a pestilence.³³⁷ Four years later, according to Ibrahim Peçevi, “tremendously cold” weather was a factor in the Ottoman army's loss of animals in what is today northern Serbia and southern Hungary.³³⁸ Ten days of freezing weather in 1781, Bašeskija tells us, caused “large [river] boulders to crack” and killed “many sheep, goats, calves, and eagles.”³³⁹ He also describes 1793 as a “cold year” in which livestock was “thin” and “rarely arriving to Sarajevo.”³⁴⁰ Besides, being a cause of disease or freezing, foul weather could take animals' lives in other ways as well. Bašeskija's chronicle reports that in 1778 a “torrent,” caused by heavy rain, drowned

329 Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 158-9.

330 Mula Mustafa Ševki Bašeskija, *Ljetopis*, 52.

331 Mula Mustafa Ševki Bašeskija, *Ljetopis*, 96.

332 Mula Mustafa Ševki Bašeskija, *Ljetopis*, 123.

333 Mula Mustafa Ševki Bašeskija, *Ljetopis*, 277.

334 Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 159-60.

335 Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 99.

336 Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 175.

337 See the footnote 72 in Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 176.

338 Ibrahim Alajbegović Pečevića, *Historija 1576-1640*, 202.

339 Mula Mustafa Ševki Bašeskija, *Ljetopis*, 203.

340 Mula Mustafa Ševki Bašeskija, *Ljetopis*, 304.

“several cows,”³⁴¹ and notes that a goat was “struck by lightning” in 1780.³⁴² These examples, taken together, show that climate was a significant factor in the mortality of livestock in the Western Balkans. The variable climatic conditions of the Little Ice Age and the accompanying diseases exerted a downward pressure on livestock numbers, creating periodic opportunities for trees to sprout, develop, and reach maturity.

The export and rearing of pigs were economic activities wholly compatible with, and in this instance dependent on, the flourishing of forests. Masts of oak and beech forests allowed peasants to pasture their pigs economically throughout the autumn and winter months.³⁴³ The šiška was the variety that was dominant in the Western Balkans. As a direct descendent of the European wild boar, the šiška was similar to the boar in appearance, survival strategies, and production attributes.³⁴⁴ Apart from eating oak and beech mast, pigs living in a forest could eat chestnuts, grass, roots, berries, worms, and reptiles.³⁴⁵ Generally speaking, a šiška would do its best to survive throughout the year, and would get a chance to fatten up during the mast season, after which it would become valuable to pig merchants. The animals burrowed the ground, exposed acorns to sunlight, and spread acorns, some of which were bound to germinate.³⁴⁶ This meant that pigs not only found a home in this forest, but also that they actually had a way of supporting the growth of new trees. Pig-raising, therefore, just like the broader context of increased livestock-raising, had a net positive effect on the regrowth of trees in the Western Balkans in our period.

341 Mula Mustafa Ševki Bašeskija, *Ljetopis*, 166.

342 Mula Mustafa Ševki Bašeskija, *Ljetopis*, 191.

343 Humans in Europe have interacted with pigs in this way since ca. 5,000 year BC, if not longer. See Umberto Albarella, Keith Dobney, Anton Ervynck, and Peter Rowley-Conwy, eds., *Pigs and Humans*, 173.

344 Marija Uremovic and Zvonimir Uremovic, *Svinjogojstvo* (Zagreb: Agronomski Fakultet, 1997), 37.

345 Umberto Albarella, Keith Dobney, Anton Ervynck, and Peter Rowley-Conwy, eds., *Pigs and Humans*, 303

346 Jelena Mrgić, *Severna Bosna: 13.-16. vek*, 310, and Joachim Radkau, *Nature and Power: A Global History of the Environment*, 60. Also see Della Hooke, “Re-wilding the Landscape” in *Trees, Forested Landscapes and Grazing Animals: A European Perspective on Woodlands and Grazed Treescapes*, ed. Ian D. Rotherham (New York: Routledge, 2013), 42. The activity of the wood-mouse (*Apodemus sylvaticus*) and the jay (*Garrulus glandarius*) also made it possible for acorns to spread and form new trees. See Frans Vera, “Can't See the Trees for the Forest,” 110-111.

Geographical Seclusion and its Impact on Exports

Geographically speaking, it was hard for merchants to profitably transport grain, industrial crops, and timber harvested in the Western Balkans to resource-demanding Istanbul, or to export it to international markets. This section will elaborate on this, demonstrate that a rise in the number of *çiftlik*s³⁴⁷ did not constitute an increase of the Western Balkans' agricultural land-base, and then briefly describe the movement of the relevant commodities in the Ottoman Empire.

Wood and grain are heavy. Transporting these materials on land was slow, energy intensive, and expensive. In our region, the price of wheat would double with every 100 kilometres of road.³⁴⁸ The poor quality and perilousness of Ottoman roads meant that in 1787 freight rates in the region were two times higher than the European rates.³⁴⁹ While tobacco and cotton could be transported by land in a cost-effective way, the Western Balkans did not engage in a large-scale production of these crops.³⁵⁰

Transportation by water was a preferred method of moving commodities between two locations. The land-locked Western Balkans, however, was not connected to Istanbul, the Adriatic Sea, or the Aegean via a river. The Danube emptied into the Black Sea, but merchant vessels in the Middle Danube had no way of reaching the Lower Danube because such a trip would take them through the Iron Gates, a dangerous gorge.³⁵¹ The river bank was also marshy and muddy, offering “treacherous footing to bargemen and barge horses” until infrastructural upgrades would be made in the

347 The scholarship, generally speaking, often perceives *çiftlik*s as being large, monocultural, and export-oriented farms.

348 Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 738. Also see Bruce McGowan, *Economic Life in the Ottoman Empire*, 9.

349 Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 681.

350 Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 738. Livestock trade was favoured over trade in industrial crops. *Çiftlik*s of the Western Balkans never embraced monocultural, or even chiefly agricultural, production. See below for a discussion of *çiftlik*s.

351 Smaller military boats, however, were able to navigate the gorge when the water was right for the rowers. Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 484. Also see Bruce McGowan, *Economic Life in Ottoman Empire: Taxation, Trade and the Struggle for Land, 1600-1800*, 15 and 26. Bruce McGowan, "The Middle Danube cul-de-sac," in *The Ottoman Empire and the World Economy*, ed. Huri Islamoglu-Inan (Cambridge: Cambridge University Press, 1987), 170.

nineteenth century.³⁵² These geographic limitations by-and-large prevented grain and wood from reaching international markets.³⁵³ The Habsburg Empire was a market that the Western Balkans had access to, but, as we saw in the previous section, this market (at least in relation to our region), had a strong preference for livestock, and not for grain, timber, or industrial crops. Moreover, the volume of trade between the Western Balkans and the Habsburg Empire was notable only after the Treaty of Passarowitz of 1718.³⁵⁴

The Western Balkans' commercial production of crops was undeveloped. Agriculture in the region is often described as “extensive” as opposed to “intensive.” Bruce McGowan writes: “Ottoman agriculture...was destined to be more extensive than agriculture in the West to the extent that it supplied European markets with its products at prices which could bear the transport costs involved.”³⁵⁵ McGowan also frames this statement in another way, noting that it did not make sense for Ottoman entrepreneurs to invest in intensive agriculture in a region that lay far away from large markets.³⁵⁶

The Ottoman historiography places great emphasis on the advent of large, commercial, and monocultural *çiftliks* during our period. This trend, however, does not hold true for the Western Balkans. The phenomenon must be discussed at this point because if it held true, then it would contradict the argument about the geographic seclusion of the Western Balkans. The “rise of *çiftliks*” in the Western Balkans did not correlate with a significant change in land-use. Fikret Adanir suggests that *çiftlik* agriculture in the Balkans played a “negligible” part in the overall economy.³⁵⁷ The only notable export-oriented *çiftlik* lands in the region and the vicinity, in his view, were to be

352 Bruce McGowan, “The Middle Danube cul-de-sac,” 170.

353 The agricultural trade of non-Ottoman Croatia was also regional in character because most of the Croatian agricultural landbase was landlocked. See Bruce McGowan, “The Middle Danube cul-de-sac,” 173.

354 Bruce McGowan, *Economic Life in Ottoman Empire: Taxation, Trade and the Struggle for Land, 1600-1800*, 23. Also see Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 188.

355 Bruce McGowan, *Economic Life in Ottoman Empire: Taxation, Trade and the Struggle for Land, 1600-1800*, 7.

356 Bruce McGowan, *Economic Life in Ottoman Empire: Taxation, Trade and the Struggle for Land, 1600-1800*, 7. McGowan also provides empirical evidence for his claims. After mapping all *çiftliks* in the vicinity of Manastir, it was clear that the majority of *çiftliks* were located in the close proximity of the Crna river.

357 Fikret Adanir, “Tradition and Rural Change in Southeastern Europe During Ottoman Rule,” 151.

found in the late eighteenth-century plains of Seres, located in present-day Greece.³⁵⁸ Geographically speaking, Adanir also believes that it was “fertile bottom lands of the coastal plains,” and not regions such as Bulgaria or Serbia, that fully embraced *çiftlik* agriculture.³⁵⁹ Closer to the Western Balkans, sections of present-day Macedonia had, relatively speaking, a more developed *çiftlik* economy. Bruce McGowan's study of Manastir, which is in agreement with Adair's assessment, shows that the “average *çiftlik* of the early eighteenth century was no great affair.”³⁶⁰ His data on the *çiftlik* of Manastir also suggests that there was no significant change in the number of *çiftliks* between 1709 and 1824.³⁶¹ While Manastir is not in the Western Balkans, the lukewarmness of agricultural activity in what the scholarship usually sees as an agriculturally productive zone³⁶² of the broader Western Balkans suggests that the *çiftliks* of the Western Balkans would indeed be less productive.³⁶³ For example, *çiftliks* in Kosovo “did not develop until the early nineteenth century.”³⁶⁴

Furthermore, the sources on *çiftliks* of the Western Balkans that I was able to study imply that these land units, far from being solely monocultural, encompassed multiple land-uses. The 1604 *defter* for the *sancak* of Bosnia notes that the *ciftluk* Salihe hatun in the village Sreda in the *nahiya* of Lefče contained a forest.³⁶⁵ The *çiftlik* of Hasan and Ahmed in the village of Radakovo in the *nahiya* of Brod also contained a forest.³⁶⁶ The same can be said about Hızir's *çiftlik* in Gradiska village,³⁶⁷ and Suleyman and Beşir's *ciftluk* in Putojevići village in the same *nahiya*.³⁶⁸ Regional *çiftliks* also

358 Fikret Adanir, “Tradition and Rural Change in Southeastern Europe During Ottoman Rule,” 153.

359 Fikret Adanir, “Tradition and Rural Change in Southeastern Europe During Ottoman Rule,” 151-152. Also see Bruce McGowan, *Economic Life in Ottoman Empire: Taxation, Trade and the Struggle for Land, 1600-1800*, 165.

360 Bruce McGowan, *Economic Life in Ottoman Empire: Taxation, Trade and the Struggle for Land, 1600-1800*, 164.

361 Bruce McGowan, *Economic Life in Ottoman Empire: Taxation, Trade and the Struggle for Land, 1600-1800*, 163.

362 Bruce McGowan, *Economic Life in Ottoman Empire: Taxation, Trade and the Struggle for Land, 1600-1800*, 121-2.

363 McGowan is in agreement with this assessment. Bruce McGowan, *Economic Life in Ottoman Empire: Taxation, Trade and the Struggle for Land, 1600-1800*, 78.

364 Bruce McGowan, *Economic Life in Ottoman Empire: Taxation, Trade and the Struggle for Land, 1600-1800*, 78.

365 Amina Kupusović, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. III*, 525.

366 Adem Handžić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. I/2*, 53.

367 Adem Handžić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. I/2*, 70.

368 Adem Handžić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. I/2*, 147.

contained pastureland.³⁶⁹ Wolf Dieter Hutteroth also confirms this notion by stating that “during the eighteenth and nineteenth centuries *çiftlik*-holders increasingly concentrated on animal breeding.”³⁷⁰ The 'rise' of *çiftliks* in the Western Balkans did not therefore represent an increase in exports of agricultural or industrial crops. International markets and Istanbul had to satisfy their craving for these crops elsewhere.

The main 'bread-baskets' of the Ottoman Empire were Egypt,³⁷¹ Crimea,³⁷² Anatolia,³⁷³ and the Lower Danube.³⁷⁴ As previously mentioned, in and around the Western Balkans, it was coastal plains and interior districts connected to the coast by waterways that attempted to grow their exports. Regions capable of generating agricultural surplus were what is today coastal Albania,³⁷⁵ southern Macedonia,³⁷⁶ Thessaly,³⁷⁷ northern Serbia and Hungary,³⁷⁸ sections of Bulgaria,³⁷⁹ Croatian Slavonia, Srem,³⁸⁰ and Hercegovina. Although located outside the Ottoman Empire in the eighteenth century, Habsburg-influenced Croatia, Srem, and the Pannonian Plain were

369 Adem Handžić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. I/2*, 374.

370 Wolf-Dieter Hutteroth, “Ecology of the Ottoman Lands,” 30.

371 Mikhail states that it was easier for Istanbul to receive grain from Egypt than from the Balkans or central Anatolia. See Alan Mikhail, *Nature and Empire in Ottoman Egypt*, 106.

372 Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 281.

373 Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 493.

374 After 1755 Wallachia was expected to contribute grain on an annual basis. This agricultural region became more important to the Empire in the eighteenth century as Crimea was drifting away from Istanbul's influence. Bruce McGowan, *Economic Life in Ottoman Empire: Taxation, Trade and the Struggle for Land, 1600-1800*, 14.

375 In the 1750s a local *ayan* exported grain. See Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 667-688. Also see Bruce McGowan, *Economic Life in Ottoman Empire: Taxation, Trade and the Struggle for Land, 1600-1800*, 20.

376 Bruce McGowan, *Economic Life in Ottoman Empire: Taxation, Trade and the Struggle for Land, 1600-1800*, 134-5.

377 Seres was the most significant regional source of export-oriented agricultural and industrial crops. Rice was also grown for commercial purposes in Skopje in the second half of the eighteenth century. Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 448.

378 Hungarian territories became the “agricultural powerhouse” in the last quarter of the eighteenth century. Suraiya Faroqi and Gilres Veinstein, *Merchants in the Ottoman Empire* (Paris: Peeters, 2008), 146.

379 Vidin, Ruse, and Sofia were zones of agricultural development in the eighteenth-century Bulgaria. Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 687.

380 For Croatia and Srem see Bruce McGowan, *Economic Life in the Ottoman Empire*, 26.

crucial when it came to supplying the Belgrade *paşalık* with grain.³⁸¹ This shows that agricultural production in this section of the Ottoman Empire was relatively weak. In the early 1620s Hercegovina exported grain to Dubrovnik, in addition to its traditional exports of leather and oxhides. Hercegovina, and perhaps, sections of Kosovo and northern Macedonia³⁸² were the only territories in the Western Balkans which I discovered to have been capable of generating agricultural surplus for trade.³⁸³ The amount of grain, however, could not have been large since merchants had to travel by land.

The Western Balkans' immediate neighbours have been out-competing the producers of cotton and tobacco in our region. While Hungary³⁸⁴ and western-and-southern Macedonia³⁸⁵ respectively grew tobacco and cotton, Thessaly came to be a major producer of cotton in the second half of the eighteenth century.³⁸⁶ In the Western Balkans in the same period, producers of tobacco in the Vardar Valley increased the output of this crop for the purposes of trade.³⁸⁷ The scope of the increase is unknown.

Whereas merchants of the Western Balkans did commercialize regional timber to a limited extent,³⁸⁸ the region itself was never a significant source of timber for Istanbul. Major Ottoman shipyards and wood-demanding irrigation networks of the Ottoman agricultural enterprise in Egypt had to rely on timber harvested from, above all, north-

381 Bruce McGowan, *Economic Life in Ottoman Empire: Taxation, Trade and the Struggle for Land, 1600-1800*, 20. 26-34. Also see Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 684.

382 Skopje, Peć and Priština commercially produced rice in the second half of the eighteenth century. The sources, however, do not indicate whether the crop was meant for export. See Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 448.

383 Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 511.

384 Suraiya Faroqhi and Gilres Veinstein, *Merchants in the Ottoman Empire*, 142.

385 Suraiya Faroqhi and Gilres Veinstein, *Merchants in the Ottoman Empire*, 111. Bruce McGowan, however, qualifies this statement by suggesting that there is “no evidence that the Manastir district produced much cotton or tobacco” in the eighteenth century. See Bruce McGowan, *Economic life in the Ottoman Empire*, 135. Stoianovich notes the significant rise of cotton production in Macedonia, after 1720s, but does not specify where in Macedonia this is happening. See Traian Stoianovich, “The Conquering Balkan Orthodox Merchant,” 260.

386 Suraiya Faroqhi and Gilres Veinstein, *Merchants in the Ottoman Empire*, 113.

387 Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 687.

388 Additional detail on this topic is in the third chapter.

western Anatolia,³⁸⁹ and then Syria, and forests surrounding the Black Sea and the Sea of Marmara.³⁹⁰ Closer to the Western Balkans, navy-purposed timber was also harvested in coastal Albania.³⁹¹ Geographic circumstances prevented the Western Balkans' commercial crop producers and timber harvesters from having easy access to world markets. This is one of the reasons why in our period the regions' *çiftlik*s never grew into large-scale producers of monocultural crops and also why the Western Balkans never became a major supplier of timber.

Agricultural Decline and Growth of Forests

Whereas the previous three sections discussed indicators (and causes) of agricultural decline and forest regrowth, this section is concerned with presenting more direct and landscape-based evidence. The 1604 *defter* for the *sancak* of Bosnia gives us the most significant and comprehensive view of a large area of our study region within our time period. It shows that agricultural and viticultural land was being used less intensively than in previous years. To measure intensity of land use, I counted every land-use-related record in the *defter*. We cannot ascertain the statistical significance, mathematically speaking, of this data because I did not count the total number of records in the *defter*, the number which runs in the thousands, and because it is likely that not all farms, land clearings, and vineyards were of the same size. The numbers I present below are still a good indicator of the net change in land-use. The *defter* suggests that there were:

- 1) 40 farms whose owners' status was unknown
- 2) 24 farms whose owners were away
- 3) 15 farms whose owners were missing

389 Significant exploitation of Anatolian trees was already under way in the sixteenth century. In the eighteenth century this trend became central to the maintenance of Egyptian agriculture. See Alan Mikhail, *Nature and Empire in Ottoman Egypt*, 140-145. Also see Halil İnalcık and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 493.

390 Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 29-30.

391 Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 29.

- 4) 13 empty villages
- 5) 3 empty towns
- 6) 2 empty sections of a village
- 7) 1 empty *mezra*
- 8) 2 farms whose owners were imprisoned
- 9) 379 abandoned farms
- 10) 190 forest clearings (including forest clearings from our study period and also those outside it)
- 11) 82 abandoned water mills
- 12) 17 new water mills
- 13) at least 24 abandoned vineyards³⁹²
- 14) 1 abandoned facility for production of *šira* (a grape beverage)
- 15) 2 vineyards that became agricultural fields
- 16) 1 agricultural field that became a vineyard

The segment of the list clearly related to land abandonment is the following: 13 empty villages, 3 empty towns, 2 empty sections of a village, 1 empty *mezra*, at least 24 abandoned vineyards, and 379 abandoned farms. On the other hand, we have 190 instances of forest clearing, presumably for agricultural purposes. It must be noted, however, that not all of these clearings were recent in 1604. In most cases, the *defter* simply classifies a piece of land as a clearing without mentioning its year of origin.³⁹³

392 Here I use the phrase “at least” because one entry in the *defter* only suggests that vineyards in the *nahiya* of Ostrožac were abandoned without providing us with the number of abandoned vineyards. See Adem Handžić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. I/2*, 553.

393 Some forest clearings were significantly older than the *defter*. For example, the village Večerička in the *nahiya* of Lašva contained a clearing which was no longer in the possession of the individual who cut down the trees, but in the possession of his son. See Adem

This means that many of the 190 clearings could have been made well before our study period. On the other hand, empty land was empty at the time when the *defter* was being composed. If we conservatively assume that a village would have 8 farms, a town 20 farm units, a section of a village 2 farms, and a *mezra* 2 farms, then the total number of abandoned farming units in the *defter* is 573. Considering that there were at most 190 forest clearings in the *defter*, and the number is likely to be lower for reasons explained above, we can assume that these clearing correspond to at most 190 farming units. A comparison between 573 farming units of abandoned land and (at most) 190 farming units of cleared land leads us to conclude that agriculture in the *sancak* of Bosnia around 1604 was in decline. This argument is further reinforced by the decrease in the number of operational water mills in the *sancak* of Bosnia. While 17 new water mills were registered in the *defter*, 82 were recorded as abandoned.³⁹⁴ It is highly probable that water mills were running out of business because agricultural land and produce were shrinking.

The *defter* also explicitly refers to a *çiftlik* belonging to Yahya-bey in the *nahiya* of Višegrad, which encompassed agricultural fields, but also “young forests.”³⁹⁵ Whether the newly reforested area was once an agricultural field, or some sort of clearcut, this example shows either that a piece of agricultural land was uncultivated for a period of time, or that no one took interest in cultivating a logged zone.

Why is the Bosnian *tahrir defter* important? It shows that agriculture in the *sancak* of Bosnia was failing in 1604, which is near the beginning of our study period. The difficult phase of the Little Ice Age had just began at that time. Major wars, the age of bandits, the scattering of rural population, and large migrations of the Orthodox populace into the Habsburg territory lay in the future. The rise of a by-and-large pastoral economy was also to become more apparent in the years to come. If agriculture was in decline in 1604, and that is what the Bosnian *defter* suggests, agriculture would have been

Handžić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. I/2*, 227. Two more examples are record from the *nahiya* of Brod mentioning land clearings that changed owners. See Adem Handžić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. I/2*, 55 and 89.

394 The *defter* contains records for seven collapsing water mills. These are included in the 82.

395 Lejla Gazić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. II*, 431.

severely suffering between the 1650s and the 1740s.³⁹⁶ Other historical sources also point us in this direction.

In the 1660s Çelebi noticed that the town Otez in the *sancak* of Krka was once an “advanced village” with “vineyards and gardens,” but the town, as a result of skirmishes with Venice, turned into a “real desert.”³⁹⁷ In 1691 the Habsburg authorities ordered that an agricultural survey be conducted in Slavonija, the region that had been recently conquered from the Ottoman Empire, and discovered that trees were reclaiming arable land. The survey showed, among other things, that of the total surveyed agricultural land in Slavonska Posavina, “somewhat more” than 40% of the land was not usable. We learn that about 30% of this land was unusable because it was overgrown by shrubs and forests.³⁹⁸ Focusing on the author’s study areas, 16% of unusable agricultural fields around the town of Brod was not appropriate for cultivation because of shrubs and forests,³⁹⁹ and the corresponding figure for the town of Kobaš was 81%. The presence of trees in this region suggests that the fields have not been cultivated when the territory belonged to the Ottoman Empire.⁴⁰⁰

The situation on the east side of the Drina is similar. Çelebi mentions that land around the town of Kruševac is “very fertile,” but regrets that no one in the area has any “aptitude for agricultural work.” “The land is empty and abandoned,” he writes.⁴⁰¹ In 1716, Daskal Stefan Ravaničanin went back to the monastery Ravanica, after having fled the area because of the 1683-1699 war.⁴⁰² The Ravanica that he found upon his return, more than twenty years since leaving it, was so “overgrown by the forest that one could not even recognize the entrance.”⁴⁰³ The monk also writes that “one could not find any wheat” in the area, and that corn was “scarce.”⁴⁰⁴ Another primary source showing

396 This is the period involving the most significant impact of the Little Ice Age as well as three devastating Ottoman-Habsburg wars that took place in the periods 1683–99, 1714–18, and 1736–39.

397 Evlija Čelebi, *Putopis*, 159.

398 Milan Vrbanus, “Ratarstvo u Slavonskoj Posavini Krajem 17. Stoljeća,” *Scrinia Slavonica* 2 (2002), 235.

399 Milan Vrbanus, “Ratarstvo u Slavonskoj Posavini Krajem 17. Stoljeća,” 212.

400 Milan Vrbanus, “Ratarstvo u Slavonskoj Posavini Krajem 17. Stoljeća,” 212.

401 Evlija Čelebi, *Putopis*, 66.

402 I assume that this is the war that took place between 1714 and 1718.

403 B. L. Lazarević, Dragomir Lazić and Ljubica Djidić, eds., *Očevici o Velikoj Seobi Srba* (Bagdala: Kruševac, 1982), 42.

404 B. L. Lazarević, Dragomir Lazić and Ljubica Djidić, eds., *Očevici o Velikoj Seobi Srba*, 43.

the contrast between the abundant forest and failing agriculture is a letter composed by Lady Mary Wortley Montagu. On April 1, 1717 she writes:

We crossed the deserts of Servia, almost quite over-grown with wood, through a country naturally fertile. The inhabitants are industrious; but the oppression of the peasants is so great, they are forced to abandon their houses, and neglect their tillage, all they have being a prey to the janizaries, whenever they please to seize upon it. We had a guard of five hundred of them, and I was almost in tears every day, to see their insolencies in the poor villages through which we passed.⁴⁰⁵

In the same spirit, Prota Mateja Nenadović (1777-1854), a leader of the First Serbian Uprising, suggests that forests along the Morava valley were so dense, that a traveler could only take one “narrow” road.⁴⁰⁶ Nenadović then compares this forest to a forest in Mačva, a region of what was to become western central Serbia,⁴⁰⁷ indicating that dense forests were common in the region. Lazar Arsenijević, a Serbian historian born in 1793, also described “deserted Serbia” and suggested that “seeing a plough, a field, or a grain of wheat was a rarity.”⁴⁰⁸

Even the Pannonian plane, whose agricultural yield⁴⁰⁹ and the volume of downed timber⁴¹⁰ appear to be higher than those seen in the adjacent Western Balkans, went through a time of agricultural decline or afforestation. In 1605 the Bačka region appeared to be deserted and those who stayed underwent extreme famine.⁴¹¹ Daskal Stefan Ravaničanin suggests that the monastery Vrdnik on the Fruška Gora mountain (in Srem) around 1699 was “abandoned,” and “spent much time in the woods.”⁴¹² Daskal Stefan remembers that the “horizon [around Vrdnik] was engulfed by trees.”⁴¹³ The Vienna War

405 Lady Mary Wortley Montagu's Letter XXV, accessed August 2017, <https://andromeda.rutgers.edu/~jlynch/Texts/montagu-letters.html>.

406 Dušan S. Simeunović, *Uzroci Nestajanja Šuma u Srbiji u XIX Veku*, 42.

407 Dušan S. Simeunović, *Uzroci Nestajanja Šuma u Srbiji u XIX Veku*, 42.

408 Dušan S. Simeunović, *Uzroci Nestajanja Šuma u Srbiji u XIX Veku*, 43.

409 We have a record of “fairly well cultivated fields” in the *sancak* of Srem for 1608. See Branislav Djurdjev and Milan Vasić, eds., *Jugoslovenske Zemlje pod Turskom Vlašću (do Kraja XVIII Stoljeća): Izabrani Izvori*, 95.

410 Petar Rokai, Zoltan Djere, Tibor Pal, Aleksandar Kasas, *Istorija Madjara* (Beograd: CLIO, 2002), 173.

411 Branislav Djurdjev and Milan Vasić, eds., *Jugoslovenske Zemlje pod Turskom Vlašću (do Kraja XVIII Stoljeća): Izabrani Izvori*, 96.

412 B. L. Lazarević, Dragomir Lazić and Ljubica Djidić, eds., *Očevici o Velikoj Seobi Srba*, 42.

413 B. L. Lazarević, Dragomir Lazić and Ljubica Djidić, eds., *Očevici o Velikoj Seobi Srba*, 42.

(1683-1699) left the large area around Buda “deserted,” with its “arable land [and] fruit trees destroyed.”⁴¹⁴

This chapter showed how climate, geography, livestock, rural depredation, and international as well as domestic conflicts worked together to downsize the land under cultivation in the Western Balkans. Producers, shippers, and traders of agricultural goods lived in insecure times, times which made it easier to obtain profits from pastoralism than from agricultural work. The growth of pastoral economy was also reinforced by the logistical and infrastructural difficulty of transporting agricultural products of the Western Balkans to Istanbul, and to world markets. These circumstances indirectly indicate that regional forests were regrowing. This finding is also consistent with contemporary descriptions of the Western Balkans’ terrain and land use.

414 Petar Rokai, et al., *Istorija Madjara*, 173.

Chapter 3. Wood Use and Land Use

Contrary to the general trend of reforestation, some areas of the Western Balkans continued to lose trees. Some of this loss was caused by natural disturbance, and the rest of it by human activity. Timber was harvested to fill the demands of urbanization and other demographic changes, trade, infrastructural improvements, industrial activity, and increased militarization of the Ottoman state. These types of wood use must have slowed down the reforestation of land in the vicinity of cities and on land dedicated to military needs. Timber extraction for the stated purposes, however, represented only a temporary reduction of regional forest biomass, which reduction would not have significantly affected land-use. In other words, even though some tree-stands have been cut down, the affected land would still have been “zoned” as forest land, allowing trees to regrow. On the other hand, the argument of forest regrowth as illustrated in the previous chapter is more significant because it is based on land-use changes.⁴¹⁵

Despite the fact that the Western Balkans underwent a demographic stagnation, if not contraction, during the seventeenth and eighteenth centuries, it is well known that this period was also a time of urbanization.⁴¹⁶ The *re'aya* across the Empire sought to find economic and personal security in or near Ottoman cities,⁴¹⁷ and the same can be said about the Western Balkans.⁴¹⁸ From the 1710s, Niš became the most important centre of the Western Balkans' portion of Rumeli.⁴¹⁹ Other regional cities of significance include Sarajevo, Belgrade, Skopje, Mostar and Banja Luka. Large markets also retreated into, or moved closer to towns after the 1570s when merchants started

415 While speaking about Ottoman forest resources as a whole, White is in general agreement with my assessment. He writes: “Some protected hardwood groves may have been destroyed, but overall, forest cover probably expanded as agriculture contracted.” See Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 290.

416 White agrees with this assessment. He suggests that what makes the Ottoman urbanization after the 1580s “so remarkable is not just the rate of urban growth but the fact that it took place at a time when overall population was falling.” See Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 257.

417 Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 254.

418 Olga Zirojević, *Srbija pod Turskom Vlašću (1450-1804)*, 74. Also see Enes Pelidija, *Banjalučki Boj iz 1737: Uzroci i Posljedice* (Sarajevo, El-Kalem, 2002), 39.

419 Olga Zirojević, *Srbija pod Turskom Vlašću (1450-1804)*, 122.

requiring armed forces' protection.⁴²⁰ We can certainly expect that areas affected by increased urbanization would have also experienced an increase in the demand for wood. The wood was the "most significant resource material," the essential ingredient in construction,⁴²¹ roofing,⁴²² heating, barrel making,⁴²³ laying puncheons (wooden road),⁴²⁴ cooking, building transportation vehicles as well as in making tools and agricultural implements.⁴²⁵ Rebuilding a town after a major fire event would also demand a significant amount of timber.⁴²⁶

A number of manufactured products also "depended on a constant supply of wood" during their production process: "leather, pottery, bricks, glass, soap, etc."⁴²⁷ In late-eighteenth-century Sarajevo, lumber was used to repair bridges, houses, water mills, and the local dam.⁴²⁸ Likewise, the construction of a police station (*karagulhane*) in Rakobice (a locality near the larger town Bihać in the *sancak* of Bosnia) demanded that "many large trees" be collected.⁴²⁹ Mula Mustafa Bašeskija's late-eighteenth-century

420 Jelena Mrgić, *Severna Bosna: 13.-16. vek*, 348.

421 We know that houses in towns were built in wood, while dwellings in the countryside were more likely to be made out of a combination of mud, straw, branches, and logs. Countryside dwellings could also be partially underground. See Dušan S. Simeunović, *Uzroci Nestajanja Šuma u Srbiji u XIX Veku*, 135-7.

422 For example see Evlija Čelebi, *Putopis*, 114 and 526.

423 See Dragana Amedoski, "Dva Popisa Zemunske Nahije iz 1578/9 and 1588/9 Godine," 29 and 33. Also see Radmila Tričković, "Katastarski Popis Krajine i Ključa iz 1741. Godine," *Mešovita Građa II* (1973): 272.

424 These were reserved for roads near wetlands and rivers. For examples see, Evlija Čelebi, *Putopis*, 364 and 522.

425 Jelena Mrgić, "Some Considerations on Woodland Resource in the Medieval Serbia and Bosnia," *Beogradski Istorijski Glasnik* 1 (2010), 91.

426 Mark Mazower, *The Balkans: a Short History* (New York: Modern Library, 2000), 46. Bašeskija tells us that fires are especially dangerous when "everyone" is away from a town on a military campaign. This circumstance created a devastating fire in Sarajevo on June 29, 1788. See Mula Mustafa Ševki Bašeskija, *Ljetopis*, 267-8. A significant demand on wood would be placed by the fact that a "scorched-earth policy was the usual strategy in the frontier skirmishes and wars with the Venetian Republic" and Austria Hungary. See Snjezana Buzov, "Ottoman Perceptions of Bosnia as Reflected in the Works of Ottoman Authors who Visited or Lived in Bosnia," in *Ottoman Bosnia: A History in Peril*, Markus Koller and Kemal H. Karpat, eds. (Madison: The University of Wisconsin Press, 2004), 88. Also see Tatjana Katić, *Tursko Osvajanje Srbije 1690. Godine*, 91, 83, and 120.

427 Jelena Mrgić, "Some Considerations on Woodland Resource in the Medieval Serbia and Bosnia," 91.

428 Mula Mustafa Ševki Bašeskija, *Ljetopis*, 166, 234, 296, and 297.

429 Michael Hickok, "Homicide Investigations in Ottoman Bosnia" in *Ottoman Bosnia: A History in Peril*, ed. Markus Koller and Kemal H. Karpat (Madison, WI: The University of Wisconsin Press, 2004), 205-224, 221.

chronicle, written in Sarajevo, gives us insight into how urbanization shaped timber extraction and wood-use in and around a populous Ottoman city located near a river.

Bašeskija's chronicle suggests that inhabitants of Sarajevo were able to extract increased volumes of timber from tree stands located in the vicinity of the town while also making a profit from wood trade. As Evliya Çelebi recorded in 1620, Sarajevo's "construction material and fuel wood" was first cut down close to the river Miljacka, marked by the owner, floated down the river, picked up by the owner once it reached the dam Bendbaša, and then "tied with ropes and brought home."⁴³⁰ While heavy rains and winds toppled trees and contributed to the high volume of lumber coming down the Miljacka,⁴³¹ Bašeskija clearly states that this volume is higher than it used to be earlier in his life. In 1770 he estimated that "5,000 to 6,000 logs" reached the Bendbaša, which was "perhaps, more than ever before."⁴³² In 1792 he wrote that the Miljacka brought "more than 6,000 logs, something that never happened before."⁴³³ He was so surprised by the number of logs that he believed that never again would so many logs arrive at the Bendbaša.⁴³⁴ If we accept that the weather during his lifetime did not vary significantly, then Bašeskija's comments indicate that Sarajevo's wood consumption in the late eighteenth century was increasing.⁴³⁵

In addition to the urbanizing trend, the scholarship also describes another demographic shift which would have affected treed landscapes. A portion of the regional *re'aya* abandoned the lowlands, moving to a higher ground. The *re'aya* moved to inaccessible locations in order to escape taxation, reduce its tax burden, avoid lowland diseases such as malaria, and live away from the Western Balkans' dangerous roads.⁴³⁶ It was the introduction of corn, and possibly potato that, allowed the agricultural peasantry for the first time to live in the elevations up to 900 meters above the sea

430 Evliya Çelebi, *Putopis*, 115.

431 Mula Mustafa Ševki Bašeskija, *Ljetopis*, 145, 192, 193, 296-7, and 314.

432 Mula Mustafa Ševki Bašeskija, *Ljetopis*, 98.

433 Mula Mustafa Ševki Bašeskija, *Ljetopis*, 297.

434 Mula Mustafa Ševki Bašeskija, *Ljetopis*, 296.

435 There were some times when the price of wood in Sarajevo would go up because of a shortage, but these shortages appear to correlate with weather conditions. Early snow and drought could disrupt the work of timber-fellers or the flow of the Miljacka and thereby produce a wood shortage. The shortage is not, therefore, an indicator of deforestation. See Mula Mustafa Ševki Bašeskija, *Ljetopis*, 130 and 174-8.

436 Wolf-Dieter Hütteroth, "Ecology of the Ottoman Lands," 31. Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 165.

level.⁴³⁷ The consequences of this circumstance are difficult to analyze. While this demographic shift, technically, would have caused a certain degree of deforestation in the uplands of the Western Balkans, it would not have significantly altered the overall ratio of forested to cleared landscapes. This was the case because the *re'aya* which moved upland moved out of lowlands, allowing forests to regrow in these areas.⁴³⁸ Furthermore, not everyone who left lowlands set out to live in the mountains: many peasants left the Ottoman Empire altogether, while others, as is evident from the previous section, moved into towns. The relocation into uplands also meant that peasants were moving away from established trade routes, which might have been an additional disincentive to increase their corn production in the hills.⁴³⁹ One more fact that sheds doubt on the deforesting impact of this relocation is that the hilly territory of Šumadija, which is in present-day central Serbia, was reforested in our period.⁴⁴⁰ This means either that the relocation to uplands was not as frequent as described in the scholarship, or, more likely, that it was not a significant contributor to the net deforestation of the region as a whole.

Wood was a commodity, and wood trade was a profitable economic activity. Sarajevo's Bašeskija informs us that the wood trader Ibrahim Lončo and another one named Ibrahim lived in Sarajevo. The former traded in "wooden construction material,"⁴⁴¹ while the latter specialized in selling wood in the village of Ljublje.⁴⁴² In Sarajevo, like in other parts of the Ottoman Empire, any profit derived from the sale of wood would be taxed. The very existence of the tax reinforces the assertion that local wood trade was profitable. We see such taxes in the *nahiya* of Zemun in the last quarter of the sixteenth century,⁴⁴³ and we also see them in a number of villages in the sancak of Bosnia in 1604.⁴⁴⁴ Finally, the profitability of wood trade can also be seen in traders' infrastructural

437 Jelena Mrgić, *Severna Bosna: 13.-16. vek*, 181.

438 We are dealing here with a demographic shift, and not with a demographic expansion.

439 In the previous chapter we saw how expensive it was for merchants to move merchandise such as grain by land. See page 53.

440 Jelena Mrgić, "Wine or Raki - The Interplay of Climate and Society in Early Modern Ottoman Bosnia," 630.

441 Mula Mustafa Ševki Bašeskija, *Ljetopis*, 340.

442 Mula Mustafa Ševki Bašeskija, *Ljetopis*, 279.

443 Dragana Amedoski, "Dva Popisa Zemunske Nahije iz 1578/9 and 1588/9 Godine," *Mesovita Gradja XXVII* (2006), 227 and 229.

444 Lejla Gazić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. II*, 224, 226, 242, 259. Also see Adem Handžić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv.*

investments. Two bridges were built at the Bendbaša for the sake of wood retrieval from the Miljacka river, one in 1782,⁴⁴⁵ and the other in 1792/3. The latter was specifically described as being built by “wood traders” to “make the transportation of wood into the town easier.”⁴⁴⁶ Since the traders would have been unlikely to invest into an unprofitable enterprise, we can expect that these investments were another sign of the general profitability of wood trade, and of the pressure that large urban centers placed on forests.

Wood and wooden materials from the Western Balkans were exported abroad, most frequently to the Habsburg lands. However, the contemporary scholarship talks about this trade only in relation to the immediate end of the eighteenth, and the arrival of the nineteenth, century. We know that, in the early years of the nineteenth century, wood (in some form) was exported to the Habsburgs from the *pašalık* of Belgrade.⁴⁴⁷ The trade in fuel wood appears to have grown between 1807 and 1810,⁴⁴⁸ probably stimulated by the arrival of Napoleon to Europe's political scene.⁴⁴⁹ Traian Stoianovich suggests that “at the turn of the century” one group of merchants forwarded to the Adriatic “Serbian and Bosnian” “lumber, firewood, [and] staves.”⁴⁵⁰ The export of wood or wooden materials appears to have been insignificant before the end of our period. Since the Ottoman state often had to requisition materials such as timber from the local countryside for military purposes,⁴⁵¹ we might expect that exporting wood into an enemy territory would not have been legal. We have a record of this line of thinking being applied to a similar context: the Nevesinje *sicil* refers to imperial *fermans* which asked local authorities to stop contraband “livestock” from reaching “enemy land” in the

I/1, 166. and Adem Handžić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. I/2*, 409, 482, 504 and 505.

445 Mula Mustafa Ševki Bašeskija, *Ljetopis*, 209.

446 Mula Mustafa Ševki Bašeskija, *Ljetopis*, 303.

447 Olga Zirojević, *Srbija pod Turskom Vlašću (1450-1804)*, 168.

448 Borislava Lilić, “Migracije iz Neoslobojenih Krajeva Turske u Karadjordjevu Srbiju 1804–1813. Godine,” in *Zbornik Matice Srpske za Istoriju*, Slavko Gavrilović, ed. (Novi Sad: Matica Srpska, 2004), 49-61, 58.

449 Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 739.

450 Traian Stoianovich, “The Conquering Balkan Orthodox Merchant,” 285.

451 Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 718.

1760s.⁴⁵² All of this suggests that wood exports probably were not a significant factor when it came to changes in tree cover of the Western Balkans in our period.

Another major user of wood in the Western Balkans was the Ottoman military. The sixteenth and seventeenth centuries were the time of what is often termed the Military Revolution.⁴⁵³ Armies expanded, and cannons grew more powerful. We see the same trend in the expansion of the Ottoman Janissary corps as well as in the growing number of mercenaries employed by the Empire.⁴⁵⁴ Advancements in military technology and scale demanded larger fortifications, bridges, “more carts, wheels, gun-carriages, more ammunition boxes and powder barrels, more barracks, barricades...palisades⁴⁵⁵...[and]...saltpeter.”⁴⁵⁶ In other words, the Military Revolution was, to an extent, also a revolution in wood use. Timber could be an objective of military operations as well: the seventeenth-century Venetians often raided the Ottoman Balkans to extract a “few good oaks.”⁴⁵⁷

The Empire's use of wood for military purposes was significant and probably slowed down, reforestation in certain locations in the Western Balkans. The annual saltpeter production in the 1650s' Ottoman Empire used as much fuel wood as was required to fuel a city of 100,000 to 200,000 people.⁴⁵⁸ Another war-related contributor to timber harvesting was the repair or expansion of fortresses in the war zones of the Western Balkans. The Ottomans gathered 500 large logs and 1,490 pieces of lumber to repair the Belgrade fortress after the War of the Holy League (1683–1698).⁴⁵⁹ The

452 Hivzija Hasandedić, trans., *Sidžil Nevesinjskog Kadije: 1767-1775. Godine*, 67 and 72.

453 This is argued by historians such as Geoffrey Parker. See Geoffrey Parker, *The Military Revolution: Military Innovation and the Rise of the West 1500-1800* (Cambridge: Cambridge University Press, 1996).

454 Mesut Uyar and Edward J. Erickson, *A Military History of the Ottomans: From Osman to Atatürk* (Santa Barbara, California and Oxford, England: ABC Clío-LLC, 2009), 90-2.

455 In fact, *palankas* were fortified with palisades.

456 J. R. McNeill, “Woods and Warfare in World History,” *Environmental History* 9 (3) (2004), 393.

457 J. R. McNeill, “Woods and Warfare in World History,” 397.

458 J. R. McNeill, “Woods and Warfare in World History,” 393. It is not clear how much of this saltpeter was actually produced in the Western Balkans. The one reference to trade in saltpeter that I discovered suggests that in the early 1620s saltpeter was imported into Dubrovnik from Egypt. Considering that Dubrovnik, geographically speaking, is in the Western Balkans and that it had trade relationships with the *sancaks* of Bosnia and Herzegovina in our period, we might conclude that at least the western portion of the Western Balkans was not a large producer of saltpeter. See Halil Inalcik and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire 1300-1914*, 511.

459 Olga Zirojević, *Srbija pod Turskom Vlašću (1450-1804)*, 110.

fortresses of Bihać,⁴⁶⁰ Sarajevo,⁴⁶¹ Blagaj,⁴⁶² Glamoč,⁴⁶³ Gradačac,⁴⁶⁴ Pirot⁴⁶⁵, and many others⁴⁶⁶ had to be repaired, reinforced, or expanded in the years between 1690 and 1769. It should be noted, however, that in the early eighteenth century Ottoman captains found that wooden fortresses were not the best defense against the growing power of Habsburg artillery. For that reason, more and more defensive towers were built out of stone.⁴⁶⁷ A removal of trees appears to have been a prerequisite for manoeuvring the Ottoman army from one location to another. In 1768, when the Bosnian *vali* Mehmed-pasa led an army to pacify Montenegrins, his campaign needed 250 carts of wood.⁴⁶⁸ A large army on the move often needed to use axes and fire to expand the narrow wooded roads of the Western Balkans. Evliya Çelebi describes one such event in the 1660s. He reports that the army, as it moved through Venetian territories, “cut and burnt forests near roads.”⁴⁶⁹ This was done, he implies, to “clear the road from thorns and branches.”⁴⁷⁰ Evliya also suggests that an army containing 53,000 men also employed 3,000 “builders, diggers and tree-fellers.”⁴⁷¹ We cannot be surprised then, that before going to war against Montenegrins, the Bosnian *vali* Mehmed-pasa asked *kadis*, *ayans*, and other agents of the Empire to “clean and expand roads that the army will use and fix any bridges that the army will be crossing.”⁴⁷²

The construction of boats and other structures for crossing bodies of water for military purposes also demanded significant amounts of wood. While construction of

460 Hivzija Hasandedić, trans., *Sidžil Nevesinjskog Kadije: 1767-1775. Godine* (Mostar: Arhiv HNK/Ž, 2009), 51.

461 This fortress was expanded at this time. See Hivzija Hasandedić, trans., *Sidžil Blagajskog kadije: 1728-1732. Godine*, 26.

462 The entry in the Blagaj sicil also suggests that the Ottoman state did not waste processed wood. After the fortress was repaired, any remaining construction material was to be repurposed. See Hivzija Hasandedić, trans., *Sidžil Blagajskog kadije: 1728-1732. Godine*, 24.

463 Enes Pelidija, *Banjačučki Boj iz 1737: Uzroci i Posledice* (Sarajevo: El Kalem, 2003), 160.

464 Wooden support beams of this fortress started to rot. See Enes Pelidija, *Banjačučki Boj iz 1737: Uzroci i Posledice*, 160.

465 Pirot was a wooden fortress with the gate made of logs. See Tatjana Katić, *Tursko Osvajanje Srbije 1690. Godine*, 44.

466 Enes Pelidija, *Banjačučki Boj iz 1737: Uzroci i Posledice*, 159-175.

467 Enes Pelidija, *Banjačučki Boj iz 1737: Uzroci i Posledice*, 159.

468 Hivzija Hasandedić, trans., *Sidžil Nevesinjskog Kadije: 1767-1775. Godine*, 70-1.

469 Evliya Çelebi, *Putopis*, 150.

470 Evliya Çelebi, *Putopis*, 150.

471 Evliya Çelebi, *Putopis*, 174.

472 Hivzija Hasandedić, trans., *Sidžil Nevesinjskog Kadije: 1767-1775. Godine*, 60 and 67.

freshwater infrastructure could be used for civilian purposes, its primary purpose was often a military one.⁴⁷³ The Bosnian *tahrir defter* of 1604 describes a tree farm on church land in the *nahiya* of Sijenica (in the *sancak* of Bosnia), dedicated to producing timber for this purpose.⁴⁷⁴ In 1739, about 100 kilometres northwest from Sijenica, near the village of Besarevina and on the Drina river, the Ottomans supposedly stockpiled 1,100 logs for ship-building.⁴⁷⁵ The Danube was the most significant regional sailing hotspot for military boats.⁴⁷⁶ Its strategic significance was enormous because it was connecting four *sancaks*: Zvornik, Smederevo, Požega and Srem.⁴⁷⁷ In the 1660s, according to Çelebi, construction material for “all boats on the Danube”⁴⁷⁸ came from the Ravno mountain, near Srebrenica and the Drina. The downed trees that Çelebi was describing in this region, however, were brought down by wind, and not an axe.⁴⁷⁹ The Ottoman army would also connect small boats into floating bridges whenever it would have to cross a river or a part of a lake during their military campaign. Peçevi describes an occasion when the army had to build three bridges: one was built from timber, another from small (wooden) boats, and the third from buffalo skins.⁴⁸⁰ Çelebi was impressed by the size of a bridge on the Sava river, and of another bridge constructed above the wetlands of Zemun.⁴⁸¹ Çelebi thought that the latter was constructed out of “hundreds of thousands

473 Olga Zirojević, “Mreža Turskih Puteva (Kopnenih i Vodenih) na Području Današnje Vojvodine i Slavonije,” *Istorijski Časopis XXXIV* (1987): 119-129, 124. Also see Tatjana Katić, *Tursko Osvajanje Srbije 1690. Godine*, 81.

474 Lejla Gazić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. II* (Sarajevo: Orientalni Institut u Sarajevu, 2000), 289.

475 Dušan S. Simeunović, *Uzroci Nestajanja Šuma u Srbiji u XIX Veku* (Beograd: Univerzitet u Beogradu, 1957), 40.

476 Mesut Uyar and Edward J. Erickson, *A Military History of the Ottomans: From Osman to Atatürk*, 84. Also see Olga Zirojević, *Srbija pod Turskom Vlašću (1450-1804)*, 108.

477 The Danube was, on one side, connected to the Drina via the Sava river, and on the other side connected to the Nisava via the Morava river. The contemporary Nišava is not a tributary of the Morava river, but this was not the case in our period. See Tatjana Katić, *Tursko Osvajanje Srbije 1690. Godine*, 26.

478 Evlija Čelebi, *Putopis*, 99-100. It is worth noting that these trees were some of the largest Çelebi had ever seen. Trees of that size he saw only on the Ottoman-Croatian border and in the Carpathian mountains. “Eighteen” people with their hands joined could “barely” encircle a tree. See Evlija Čelebi, *Putopis*, 100 and 241.

479 Evlija Čelebi, *Putopis*, 99-100.

480 The wood and boats came from Buda. See Ibrahim Alajbegović Pečevija, *Historija 1576-1640*, 123. Peçevi describes a number of other instances when the army used wood to build bridges in the late sixteenth- and early seventeenth-centuries. See Ibrahim Alajbegović Pečevija, *Historija 1576-1640*, 129, 196, 199, and 201.

481 Evlija Čelebi, *Putopis*, 349.

of oak logs.⁴⁸² In 1594 the Ottoman army wheeled 300 carts of “bridge-construction material” into the Hungarian plain to contribute to a pacification of a rebellion.⁴⁸³ The Ottomans were also interested in repairing their boats and therefore not wasting wood: the *derbend* Gradcanica in the *nahiya* of Brod on the Sava river was there to perform these kinds of repairs.⁴⁸⁴ Generally speaking, war was a significant factor in determining the fate of individual trees in the Western Balkans.⁴⁸⁵

Mining and the production of salt were two economic activities that depended on wood use. In mining, wood was essential to “tools and equipment, working and lodging premises, as well as the underground tunnel construction.”⁴⁸⁶ Most significantly, wood was utilized to produce charcoal, a type of fuel that was preferred for smelting and refining processes. According to one estimate, one ton of iron required six tons of charcoal, which required almost 60 hectares worth of wood.⁴⁸⁷ According to another estimate, the production of one ton of iron required 12 hectares of coppice.⁴⁸⁸ Even though mining activity in our time period was diminished⁴⁸⁹ compared to the sixteenth century, there is evidence that some mines in the Belgrade *paşalık* (i.e. the Majdanpek) stayed active in this new, diminished, form well into the eighteenth century.⁴⁹⁰ Wood was just as an essential resource when it came to producing salt in the *sancak* of Zvornik's Tuzla. Salty spring water was boiled, with wood being used as fuel, until salt precipitated.⁴⁹¹ According to one estimate, Tuzla, in the seventeenth and eighteenth century, was annually producing around 600 tons of salt.⁴⁹² This would have made the Tuzla saltworks a significant utilizer of wood, just as was the case with the Ottoman mining initiatives. While the amount of wood needed to fuel mining and saltworks

482 Evlija Čelebi, *Putopis*, 349.

483 Branislav Djurdjev and Milan Vasić, eds., *Jugoslovenske Zemlje pod Turskom Vlašću (do Kraja XVIII Stoljeća)*, 152.

484 Adem Handžić, ed., *Opširni Popis Bosanskog Sandžaka iz 1604 Godine: Sv. I/2*, 112.

485 As mentioned in the first chapter, those in charge of internal security were also known to set forest fires in order to expel bandits. See page 33.

486 Jelena Mrgić, “Some Considerations on Woodland Resource in the Medieval Serbia and Bosnia,” 94.

487 See Jelena Mrgić, “Some Considerations on Woodland Resource in the Medieval Serbia and Bosnia,” 97.

488 Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, 59.

489 Şevket Pamuk, *A Monetary History of the Ottoman Empire* (New York: Cambridge University Press, 2000), 139.

490 Srdjan Katić, *Rudnik Majdanpek: XVI-XVIII Vek*, 6.

491 Jelena Mrgić, *Severna Bosna: 13.-16. vek*, 333-335.

492 Jelena Mrgić, *Severna Bosna: 13.-16. vek*, 336.

operations appears to be very large indeed, it is likely that this wood would have been extracted using coppicing and pollarding practices.⁴⁹³ These methods would have left roots, if not entire tree trunks, intact, allowing the same tree to rapidly regrow. Pollarding and coppicing, it must be noted, were compatible with livestock pasturing, the economic activity whose importance significantly increased at the expense of land cultivation in our period.⁴⁹⁴

Besides anthropogenic forest disturbance, a number of other factors contributed to tree death: forest fire, floods, wind, disease, insects, and landslides. Čelebi describes a scene near Srebrenica in which “large tree trunks” were falling because of a “hellish wind.”⁴⁹⁵ Bašeskija informs us about a drought that caused “year-long” forest fires which consumed trees “across Rumeli.”⁴⁹⁶ Forest fires on hills and mountains near Sarajevo, we learn from him, also raged for a number of days.⁴⁹⁷ In 1777 Bašeskija heard from someone he met at a social event that “some type of moth ate all leaves in the oak forests of Krajina,” “covering entire tree trunks.”⁴⁹⁸ Even though all these cases of forest disturbance resulted in tree death, they also represent temporary contractions of tree cover. The disturbances themselves are deeply embedded in the inner workings of forest ecosystems.⁴⁹⁹ In fact, most anthropogenic wood-uses described in this chapter can also be understood as temporary disturbances, disturbances which allowed trees to return.

493 Jelena Mrgić, “Some Considerations on Woodland Resource in the Medieval Serbia and Bosnia,” 97.

494 Iris Glimmerveen, “The Future Potential of Wood-Pastures” in in *Trees, Forested Landscapes and Grazing Animals: A European Perspective on Woodlands and Grazed Treescapes*, ed. Ian D. Rotherham (New York: Routledge, 2013), 342. Also see Oliver Rackham, “Woodland and Wood-Pasture,” 15.

495 Evlija Čelebi, *Putopis*, 99-100.

496 Mula Mustafa Ševki Bašeskija, *Ljetopis*, 210.

497 *Ibid.*, 210.

498 Mula Mustafa Ševki Bašeskija, *Ljetopis*, 153.

499 Forest disturbance is, in many ways, the engine of ecological succession.

Conclusion

This study showed that Istanbul's eminent households were highly motivated and had intention to control forests of the Western Balkans. The Porte's leading economic ideas, laws, policies and actions were there to foster demographic and agricultural growth, both of which were tied closely to forest depletion.

Despite the imperial elites' sentiments, these forests, as demonstrated by a careful reading of primary sources, grew in size. This is also indicated by reductions in rural life security, the growth of pastoralism at the expense of agriculture, and the relative geographical isolation of the region from major trade routes. The Little Ice Age added another layer of precariousness onto the lives of the *re'aya*, land cultivators, thereby contributing to reforestation. While the scholarship often ably argues that political decentralization of this period contributed to the Empire's political and military strengthening, we cannot claim that the decentralization allowed the Empire to offer increased protection to its peasants or to make a better use of natural resources in the Western Balkans.

There were, of course, exceptions to the general trend of reforestation. The demands of urbanization, infrastructural improvements, industrial activity, and the militarization of the state worked to slow down the regrowth of trees in the vicinity of cities and on military-purposed land. These types of timber extraction were small-scale and temporary reductions of the Western Balkans' forest biomass. Clearcutting, pollarding, or coppicing an area of land, generally speaking, did not mean that the land would be repurposed for something other than tree growth. In these areas, time and forces of natural succession were there to ensure that trees regrow.

The regrowth of trees in the Western Balkans despite the Porte's contrary intention demonstrates that Istanbul's political elites in our period failed to summon the strength to create social conditions conducive to demographic growth, agricultural expansion, and forest exploitation, conditions such as the rule of law, monopoly over violence, and peace. The Empire fought on, peasants suffered, and oak thrived.

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