

Natural Time and Bureaucratic Time. State Building, Forests and Environmental Conflicts in the 1800s

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Abstract

Historians traditionally consider the Napoleonic period a key point in the process of state centralization in most of continental Europe. This is certainly true of the legislative and administrative transformations overseen by state authorities during that epoch. However, there is still much to learn about the consequences of these changes on the ground, especially in peripheral regions.

In this respect, an environmental history approach can provide new perspectives on the growing presence of state authorities in the management of environmental resources and associated struggles in rural areas. In this article, I analyse the reactions of some alpine communities to state intervention in the years following the implementation of Napoleonic reforms. The lens through which these interactions are observed is that of valorisation of forest resources, which were the economic linchpin of alpine communities and, at the same time, a strategic issue for state authorities.

1. Introduction

One of the most dominant and debated themes of modern historiography is that of state building. It has been treated in a myriad of analytical fashions and it has been incorporated into a variety of disciplines, including but not limited to economic, legal and social history. Environmental history has also recently engaged with this subject, with important contributions on *ancien régime* states, as well as on national states¹. Another key stage in the process of state building is that of the so-called administrative state, which, in most of Europe, started in the second half of the eighteenth century and culminated in the Napoleonic period and the Restoration².

The transformation that occurred in that period can be elucidated at a range of focal points: the modes of operation and recruitment of the bureaucratic machine; those of identification and control of persons; the

¹ For the first case, see the considerations in Paul Warde, *Ecology, economy and state formation in early modern Germany* (Cambridge: Cambridge University Press, 2006). For the second, see the special issue of *Environment and History* 20/1 (2014) on *Nature and Nation* and, in particular, Marco Armiero, Wilko Graf von Hardenberg, 'Introduction':1-8.

² David Laven, Lucy Riall (eds.), *Napoleon's Legacy. Problems of Government in Restoration Europe* (Oxford-New York: Berg, 2000).

relationship between executive and legislative power; or that between army and society, to name but a few examples³. This transitional stage was also characterized by a new mode of defining territory and new methods of territorial government⁴.

In this respect, the most famous and studied example is the emergence of scientific forestry, which developed in the second half of eighteenth century in France and, especially, in the German states. In that period, the new silvicultural scientists, thanks to the contribution of other disciplines, like geometry, cartography and statistics, established a method of estimating wood mass in a specific forest area to determine the part that could be cyclically cut without compromising the reproduction of the forest in the long run⁵. Between eighteenth and nineteenth centuries, these theories were rapidly adopted as a basis for new forestry laws by most European countries⁶. These new systems of forest management were subsequently exported to the colonies acquired by the major European powers throughout the nineteenth century⁷.

Frequently, scholars have investigated these dynamics on a macro-analytic level, by adopting a top-down perspective. The emphasis has been on the theoretical premises of the new silvicultural science, its developments and diffusion, and its codification in new forest codes by most of nineteenth century states and colonial governments. In this view, modern forestry has been described as a unidirectional process in

³ Cf. Marco Meriggi, *Gli stati italiani prima dell'Unità. Una storia istituzionale* (Bologna: il Mulino, 2011), Stuart Woolf, *Napoleon's Integration of Europe* (Abingdon: Routledge, 1991).

⁴ Stefania Barca, *Enclosing Water. Nature and Political Economy in a Mediterranean Valley, 1796-1916* (Cambridge: White Horse Press, 2010); Alice Ingold, 'To Historicize or Naturalize Nature: Hydraulic Communities and Administrative States in Nineteenth-Century Europe', *French Historical Studies* 32 (2009): 385-417. See also Foucault's concept of 'governmentality', Michel Foucault, *Security, Territory, and Population* (Basingstoke: Palgrave Macmillan, 2007).

⁵ Mauro Agnoletti, 'Man, forestry, and forest landscapes. Trends and perspectives in the evolution of forestry and woodland history research' *Schweizerische Zeitschrift für Forstwesen* 157/IX (2006/9): 384-92; S. Ravi Rajan, *Modernizing Nature Forestry and Imperial Eco-Development 1800-1950* (New York: Oxford University Press, 2006).

⁶ Cf. Marco Armiero, *Il territorio come risorsa. Comunità, economie e istituzioni nei boschi abruzzesi (1806-1860)* (Napoli: Liguori, 1999); Davide Bobba, *Boschi, comunità, stato. Piemonte 1798-1861* (Rome: Carocci, 2015); Carl Griffin, 'More-than-human histories and the failure of grand state schemes: sylviculture in the New Forest, England', *Cultural Geographies* 17/IV (2010): 451-72; Renato Sansa, *L'oro verde. I boschi nello Stato pontificio tra XVIII e XIX secolo* (Bologna: Cleup, 2003). Tamara Whited, *Forests and Peasant Politics in Modern France* (New Haven: Yale University Press, 2000).

⁷ Cf. Richard Grove, Vinita Damodaran, Satpal Sangwan (eds.), *Nature and the orient. The environmental history of South and Southeast Asia* (Delhi: Oxford University Press, 1998); K. Sivaramakrishnan, 'Science, Environment and Empire History: Comparative Perspectives from Forests in Colonial India', *Environment and History* 14 (2008): 41-65; Nancy Peluso, *Rich Forests, Poor People: Resource Control and Resistance in Java* (Berkeley-Los Angeles: University of California Press, 1992). See also the relationship between the early American conservationists and European professional foresters in Karl Jacoby, *Crimes against Nature: Squatters, Poachers, Thieves, and the Hidden History of American Conservation* (Berkeley: University of California Press, 2001).

which the state imposed a standardized and uniform system of forest management on its territory through new rules, new bureaucracy and new prohibitions⁸.

This is certainly what appears to us if we read the main prescriptive sources, such as the proems of many nineteenth century forest codes and the forestry treatises that inspired that legislation. However, prescriptive does not mean performative and state forestry, in its concrete application, had to adapt to different social, economic and environmental contexts. The active role played by indigenous knowledge, institutions and networks in critically redefining the development of silvicultural science has been highlighted in particular for the colonial forestry in South Asia⁹. More recently, Richard Hölzl has suggested shifting the focus from the colonies back to early nineteenth century Europe, in order to analyse the interactions of local actors and professional forestry during the dawn of silvicultural science¹⁰.

In this respect, I argue that a local and micro-analytical approach could enhance our understanding of the complex relationships between silvicultural theories and forestry administration on the one hand, and rural customary practices on the other. Indeed, this perspective allowed to focus not only on the forest policies introduced by the government, the administrative apparatus created to implement them, and the inspiring role played by the nascent science of forestry, it also facilitated analysis of these administrative transformations in respect of their local reception, and contributed to a keener understanding of how the new rules were constantly mediated, contrasted or invoked - more or less opportunistically - by the host of actors involved¹¹.

In this article, I examine the concrete effects at the local level of some juridical transformations concerning the use of environmental resources introduced during the Napoleonic period and carried out after the Restoration. Geographically, this investigation is limited to the valleys of the North-Eastern Italian Alps that constituted the area of Cadore, in the northern part of Piave River basin (see the map in figure 1).

⁸ Probably the most famous example in this sense is James C. Scott, *Seeing Like a State. How Certain Schemes to Improve the Human Condition Have Failed* (New Haven-London: Yale University Press, 1998).

⁹ K. Sivaramakrishnan, *Modern Forests: Statemaking and Environmental Change in Colonial Eastern India* (Stanford University Press, 1999); Peter Vandeergest, Nancy L. Peluso, 'Empires of Forestry: Professional Forestry and State Power in Southeast Asia, Part 1', *Environment and History* 12 (2006): 31-64.

¹⁰ Richard Hölzl, 'Forests in Conflict: Rural Populations and the Advent of Modern Forestry in Pre-industrial Germany, 1760-1860', in Genevieve Massard-Guilbaud, Stephen Mosley (eds.), *Common Ground: Integrating the Social and Environmental in History*, pp. 198-223 (Newcastle upon Tyne: Cambridge Scholars Publishing, 2011).

¹¹ On this approach see Giovanni Levi, 'The Origins of the Modern State and the Microhistorical Perspective', in Jürgen Schlumbohm (ed.), *Mikrogeschichte Makrogeschichte. Komplementär oder inkommensurabel*, pp. 53-82 (Göttingen: Wallstein Verlag, 1998); Jacques Revel (ed.), *Jeux d'échelles, la micro-analyse à l'expérience* (Paris: Gallimard-Seuil, 1996).

Chronologically, it focuses on the years following the introduction of the French reforms in these territories.

The choice of Cadore is motivated by the importance of woodlands in its local economy. In this mountainous area, the attitude adopted to forest resources was crucial to local communities, since much of the territory was precluded from agricultural activity and the constant grain deficit had to be balanced by exploitation of the forest. At the same time, forest control was becoming a strategic issue for the governmental authorities, with an eye to guaranteeing the long-term supplies necessary for the populations and proto-industries of urban areas, and limiting hydro-geological risk.

The central role of forest resources of this area, both for the local communities and the state apparatus, allows to highlight more clearly the reciprocal interactions among the different actors involved in the management of woodlands. The focus is not limited on the two extremes of this relationship (i.e. peasant and governmental authorities), but also on intermediate figures, which frequently acted as brokers between centre and periphery during the early stages of professional forestry and, more broadly, in the state building process¹².

Another reason makes the Cadore case study particularly relevant for an overall understanding of the centre-periphery interactions within the development of scientific forestry and the administrative apparatus related to its implementation on the ground. Research carried out so far on this topic has focused mainly on situations in which the practices traditionally adopted in woodlands were, so to speak, 'not intensive'. The opposition was frequently articulated in this way: on the one hand, new forestry administrations interested in extracting the largest wood mass achievable without compromising reproduction of the forest in the long run; on the other hand, local population that used woodlands for different multi-functional activities increasingly opposed by the authorities, such as gathering of dry wood, temporary farming, hunting or grazing in the forest¹³. The conflicts that emerged from this opposition were mainly intermodal, that is from profoundly different systems of forest utilization¹⁴.

¹² On the role of brokers as figures that operate both on the local and central level during the process of state building, see Anton Blok, *The Mafia of a Sicilian Village, 1860-1960: A Study of Violent Peasant Entrepreneurs* (Oxford: Blackwell, 1974).

¹³ The classical model, in this respect, is an article published by a young German journalist, destined for great intellectual influence, in the *Rheinische Zeitung* (1842): Karl Marx, 'Proceedings of the Sixth Rhine Assembly. Debates on the Law on Thefts of Wood', in Karl Marx, Friedrich Engels, *Collected Works*, I, pp. 224-63 (New York: International Publisher, 1975). Now, cf. Ramachandra Guha, *The Unquiet Woods: Ecological Change and Peasant Resistance in the Himalaya* (Berkeley-Los Angeles: University of California Press, 1990); Edward P. Thompson, *Customs in Common* (London: Penguin Books, 1993); Peter Sahlin, *Forest Rites. The War of Demoiselles in Nineteenth-Century France* (Cambridge-London: Harvard University Press, 1994).

¹⁴ On the differences between intermodal e intramodal conflicts, see Manuel González de Molina, Antonio Herrera, Antonio Ortega Santos, and David Soto. 'Peasant Protest

Also in Cadore, as we will see, population carried out several multi-functional activities in the woodlands. However, the main ones were certainly those related to timber trade. Such activities referred to customary norms and practices often alternative to those proposed by the new silvicultural science, but they pursued the same objectives of high commercial exploitation of timber. Thus, in Cadore, new forestry rules had to confront with well-established systems of timber exploitation on which the overall socio-ecological dynamics of the area were founded. For these reasons, in Cadore, the dialogue between state-based and scientific forestry and locally based and customary forestry was, occasionally, particularly conflictual. Nevertheless, these conflicts were part of a mutually constitutive process, in which modern forestry was constantly hybridised by its exposure to customary practices, whose efficiency was frequently recognized by the same agents of forestry admiration at the local level. Hence, Cadore forests are a privileged point of view to overcome a dualistic approach, in which scientific forestry and customary practices are strictly separated and divergent realities. Instead, this case study shows the integrations between these different levels and how the process resulted in the development of forestry as a 'conflicted knowledge'.

The following section provides some features of Cadore area, and the institutional and economic context in which it was placed during the *ancien régime* (Venetian Republic and the Venetian timber supply network). Sections 3 and 4 describe the attempts to introduce a state-based system of forestry administration in Cadore under the French (section 3) and Austrian (section 4) domination, in the early nineteenth century, and the reactions these interventions caused. Section 5 explains, with some examples, the modalities and the channels through which the customary and local-based forestry methods influenced the development of institutional and scientific forestry. The last paragraph is devoted to a brief concluding remark.

as Environmental Protest: Some Cases from the Eighteenth to the Twentieth Century', *Global Environment* 4 (2009): 48–77.

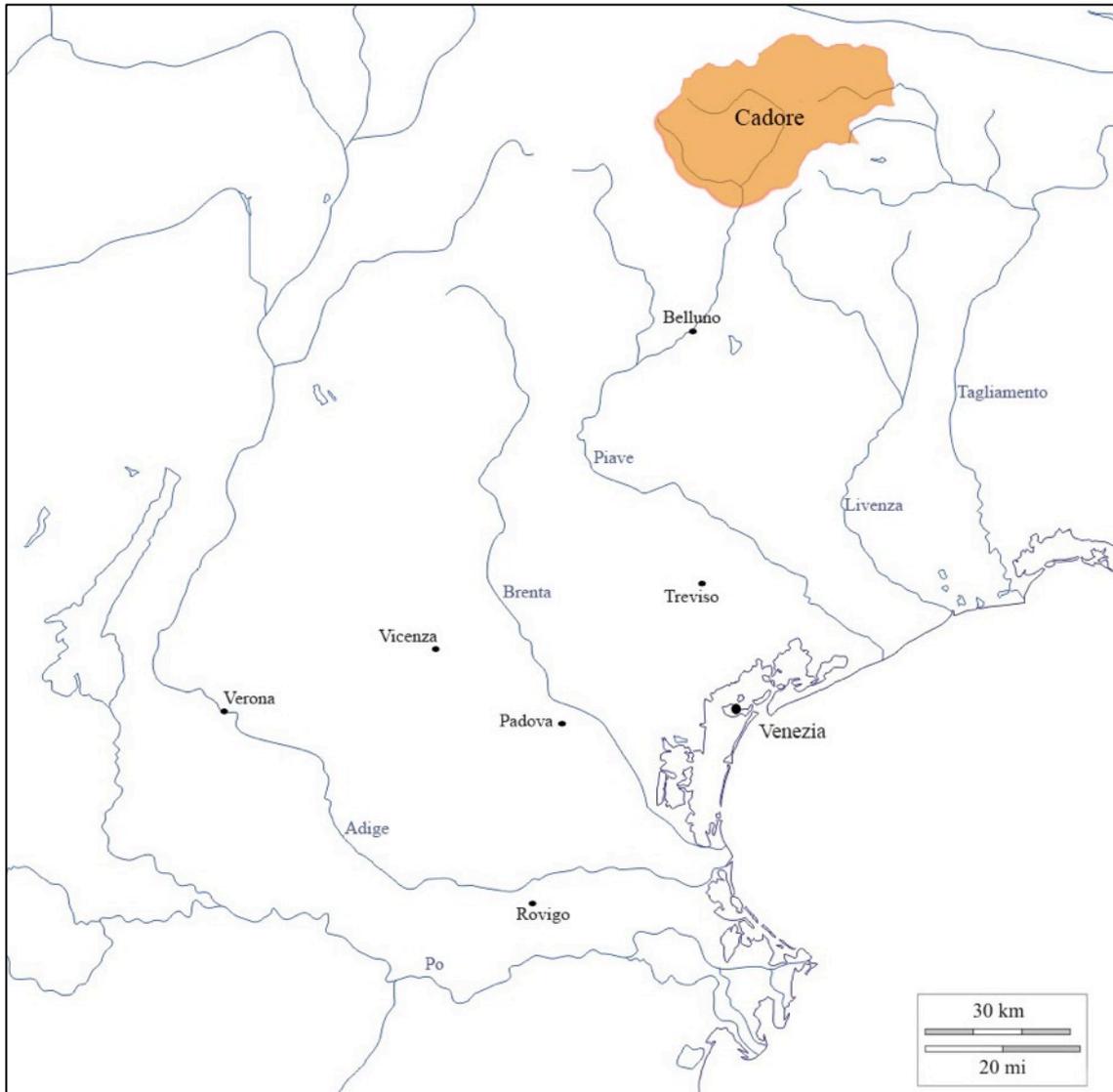


Figure 1: The location of Cadore (in orange) in the North-East of Italy. Cartography by Federico Buda¹

2. Alpine forests and timber trade in the Venetian Republic

In the first volume of his celebrated *Civilization and Capitalism*, Fernand Braudel classified civilizations that existed before the advent of coal as civilizations of wood¹⁵. Similarly, in another classic of historiography, *Der moderne Kapitalismus*, Werner Sombart referred to the time before the industrial revolution as the wooden era¹⁶. If those definitions can be applied to Europe as a whole, they assume a pronounced pertinence in the case of Venice, whose commercial fortunes and urban

¹⁵ Fernand Braudel, *Les structures du quotidien: le possible et l'impossible* (Paris: Armand Colin 1979).

¹⁶ Werner Sombart, *Der Moderne Kapitalismus* (Leipzig: Verlag von Duncker & Humblot, 1916–1927).

expansion were determined to a great extent by the availability of this resource and the opportunities it presented.

The great demand for timber from Venice and other cities of the Veneto plain, one of the most populous areas of modern Europe, was covered by the alpine and perialpine areas surrounding the Adriatic coast¹⁷. What made this area the main supply basin of the Venetian Republic, in addition to the necessary presence of the most required arboreal species, and its proximity to urban centres, was the morphology of the territory. Indeed, before the spread of the railway networks, a necessary precondition for the development of the timber trade was the presence of streams capable of transporting timber from cutting areas to the urban marketplaces¹⁸. Therefore, the Venetian timber supply network developed along the main rivers flowing from the Alps to the Veneto plain, through a system already consolidated before the expansion of Venice into the mainland (1300s-1400s) and which survived for almost a century after the fall of the Republic in 1797¹⁹.

As part of guaranteeing a steady flow of timber into the military shipyards of the Arsenale, Venice placed some forests under direct and intense state control²⁰. But this policy applied to only a small portion of the forested land located within the boundaries of the Republic. The rest of the forest heritage was valorised according to criteria determined by two key players, namely alpine communities and timber merchants²¹.

Timber merchants – at first Venetian patricians, gradually replaced by local operators – organized and oversaw the complex (and heavily remunerated) chain that transformed the wood of the alpine forests into the planks that were retailed in the urban markets. However, in most cases, they rented woodland areas or just bought already cut logs, while the Alpine communities either had the ownership or the use rights of mountain forests²².

¹⁷ Claudio Lorenzini, Giulia Bernardin, 'Assenti più o meno illustri: le «comunità alpine» e il bosco. Il caso delle Alpi orientali', *Histoire des Alpes – Storia delle Alpi – Geschichte der Alpen* 18 (2013): 179-95; Andrea Zannini, 'Sur la mer, près des montagnes. Venise et le circuit de production et vente du bois (XVIe-XIXe siècle)', in Alain Cabantous et al. (eds.), *Mer et montagne dans la culture européenne (XVIe-XIXe siècle)*, pp. 43-55 (Rennes: Press Universitaires de Rennes, 2010).

¹⁸ Graham Hollister-Short, 'The Other Side of the Coin: Wood Transport Systems in Pre-Industrial Europe', *History of Technology* 16 (1994): 72-97.

¹⁹ Antonio Lazzarini, 'Le vie del legno per Venezia: mercato, territorio, confini', in Mauro Ambrosoli, Furio Bianco (eds.), *Comunità e questioni di confini in Italia settentrionale (XVI-XIX sec.)*, pp. 97-110 (Milano: Franco Angeli, 2007).

²⁰ Karl Appuhn, *A Forest on the Sea: Environmental Expertise in Renaissance Venice* (Baltimore: Johns Hopkins University Press, 2009).

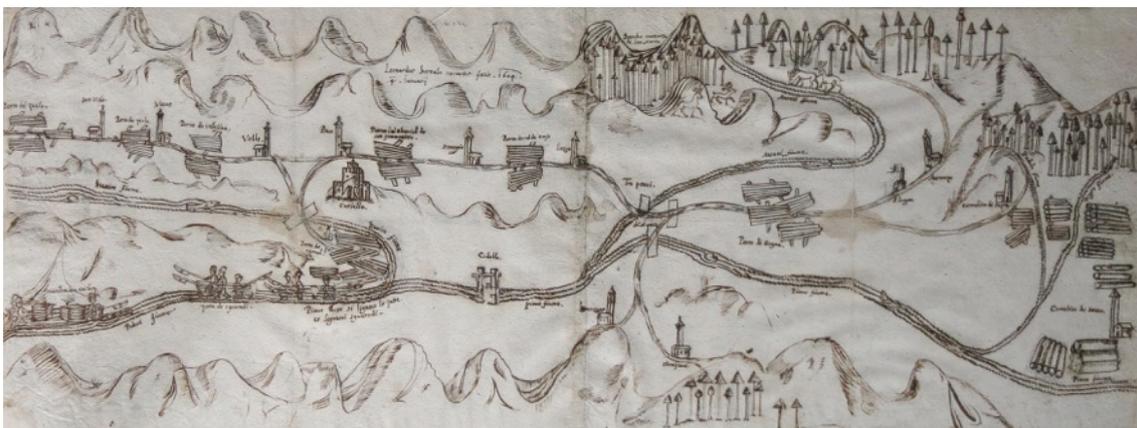
²¹ Andrea Zannini, 'Un ecomito? Venezia (XV-XVIII sec.)', in Guido Alfani, Matteo Di Tullio, Luca Mocarelli (eds.), *Storia economica e ambiente italiano (ca. 1400-1850)*, pp. 100-14 (Milano: Franco Angeli, Milano 2012).

²² Gigi Corazzol, *Piani Particolareggiati. Venezia 1580 – Mel 1659* (Seren del Grappa: Edizioni Dbs-Libreria Pilotto Editrice, 2016); Katia Occhi, *Boschi e mercanti. Traffici di legname tra la contea di Tirolo e la Repubblica di Venezia (secoli XVI-XVII)* (Bologna: il Mulino, 2006).

From the judicial point of view, local communities held these forests, like other types of common lands (pastures, swamps, streams), in two different forms. (a) The land that rural communities were using according to old customs, but for which there was no act that would document the official possession, became state property of the Venetian Republic, which allowed its use to the same communities with renewable investitures. These lands were called *beni comunali*. (b) Other communities were recognized as the rightful owners of the lands they were profiting from, due to documented purchases or special privileges; these lands were called *beni comuni* and could be independently managed by the respective communities²³.

The latter was the case of Cadore forests, probably the main woodland area of the Venetian Republic, due to the abundance of the most sought-after arboreal species for construction and shipbuilding (especially fir and larch) and the strategic location, in the proximity of the Piave River basin, the fastest way to reach the Veneto plain and the Adriatic sea.

In Cadore, as in other Alpine areas, forests were absolutely fundamental to the well-being of the local communities and their population in different ways. The sale of cutting licenses or already cut logs allowed the communities to offset their constant grain deficit as well as providing important employment opportunities for locals, which were engaged in cutting down and wood hauling. Domestic workforce was also used to construct and upkeep the structures related to timber transport. The main structures used for this purpose were *risine*, ditches made of wood or stone that facilitated a controlled descent towards riverbanks, and *stue*, temporary dams that allowed to collect enough water to start the river transport (see a representation of timber trade in Cadore in figure 2)²⁴. In addition to monetary income, forest resources could also be put to domestic use: firewood was needed for cooking and heating purposes. Woodlands and the surrounding areas could also be used for grazing livestock²⁵.



Melanges de l'Ecole française de Rome. Moyen-Age. Temps modernes 1007/11 (1988).
Figure 2: Timber trade in Cadore depicted by Leonardo Bernabò (1604). Source: Archivio Magnifica Comunità Cadorina. The map shows the first stages of timber trade in Cadore: hauling operations; logs accumulation near the riverbanks; 'free floating' in the first, and not navigable, part of Piave River and its tributaries; the construction of rafts

The extensive degree of autonomy granted to alpine communities and timber merchants in the exploitation of alpine forests became the subject of increasing criticism during the second half of the eighteenth century. A number of interconnected aspects influenced this situation. First of all, a strong concern about the risk caused by the exertion of excessive pressure on forest areas spread throughout Europe. In previous centuries, there had been cyclical alarms about potential or actual wood shortages, but they had never extended to the level of disquiet evident in the late 1700s²⁶. The primary motivation for this fear was the likelihood that deforestation would increase wood supply costs for urban areas and perhaps leads to hydrogeological instability.

A central factor colouring the debate on wood sustainability, as it was for other agronomic issues of the day, was the new Enlightenment scientific perspective spreading around Europe²⁷. In French states, and even more so in German states, the new science of forestry was emerging. Its purpose was to provide the tools for a rational and centralized management of forest resources founded on the concept of sustained yield (*Nachhaltigkeit*)²⁸.

Several scholars have demonstrated that perception of the extent of the problem of deforestation was much greater than the reality²⁹, but it was this flawed conviction which prompted the Napoleonic government to enact a new forestry act when, after the Peace of Pressburg (1805), it extended its administration over the territories formerly belonging to the Venetian Republic³⁰.

3. *The Napoleonic forest legislation: conflicts and negotiations*

In Veneto, as in most of Europe, Napoleonic occupation coincided with deep renewal, most remarkably in respect of legislative models and administrative structures. This period saw the construction of what

²⁶ Paul Warde, 'Fear of Wood Shortage and the Reality of the Woodland in Europe, c.1450–1850', *History Workshop Journal* 62 (2006): 29-57; Joachim Radkau, *Wood. A history* (Cambridge: Polity Press, 2012).

²⁷ Robert P. Harrison, *Forests. The Shadow of Civilization* (Chicago: University of Chicago Press, 1992), pp. 114-24.

²⁸ Henry Lowood, 'The calculating forester: quantification, cameral science, and the emergence of scientific forestry management in Germany', in Tore Frängsmyr, J.L. Heilbron, Robin E. Rider (eds.), *The quantifying spirit in the Eighteenth century*, pp. 313-43 (Berkeley: University of California Press, 1991).

²⁹ Andrée Corvol, 'Une illusion française: la penurie des ressources ligneuses, 1814-1914', and Bernard-Stefan Grewe, 'Shortage of Wood? Towards a New Approach in Forest History: the Palatinate in the 19th century', in Mauro Agnoletti, Steven Anderson (eds.), *Forest History: International Studies on Socioeconomic and Forest Ecosystem Change*, pp. 127-42; 143-52 (Wallingford-New York: CABI, 2000); Antonio Lazzarini, 'Carbone e legna da fuoco per le manifatture veneziane nella seconda metà del Settecento. Una crisi energetica?', *Natura. Rivista di scienze naturali* 98/I (2008): 159-68

³⁰ Renato Sansa, 'Il mercato e la legge: la legislazione forestale italiana nei secoli XVIII e XIX', in Piero Bevilacqua, Gabriella Corona (eds.), *Ambiente e risorse nel Mezzogiorno contemporaneo*, pp. 3-26 (Corigliano Calabro: Meridiana, 2000).

proved to be a durable centrally-controlled and bureaucratic state. In fact, some of the primary Napoleonic legal structures survived the entire period of Austrian domination and were still reference points for the unified Italian state half a century later (1866)³¹.

This was certainly the case with the Napoleonic forest legislation, which was enacted in 1811 and remained in force until the ratification of the first Italian forestry act in 1877³². The 1811 forest code for the Napoleonic Kingdom of Italy was inspired by its French counterpart, and dutifully followed the two main principles characterizing Napoleonic legislative activities: uniformity and centralization³³. Indeed, while the Venetian rules were intended to ensure the preservation of specific forest areas or particular arboreal species, the new legislation systematically incorporated all strands of overall forest heritage, regardless of legal status, geographical location or species. Moreover, the organizational model designated for the implementation of the code was modernized and placed under the supervision of the minister of finances³⁴. A division of this new administration, the General Directorate of *Demanio* (state property), was in charge to oversee all the activities in the public woods; not only those directly controlled by the state, but also those previously considered *beni comuni* and *beni comunali*³⁵.

Hence, from an institutional point of view, the Napoleonic reforms represented a turning point in the ways in which the state defined and shaped forests and the natural world generally. Nevertheless, the efficacy of the Napoleonic legislation should not be evaluated by its codification and by its presumed performative efficacy, but by its application at the local level³⁶. I will assess this local application in the following pages, analysing the reactions to the new legislation in Cadore, which

³¹ Marco Meriggi, 'State and Society in Post-Napoleonic Italy', in David Laven, Lucy Riall (eds.), *Napoleon's Legacy. Problems of Government in Restoration Europe*, pp. 49-64 (Oxford-New York: Berg, 2000).

³² David Celetti, *Il bosco nelle provincie venete dall'Unità ad oggi. Strutture e dinamiche economiche in età contemporanea* (Padova: Cleup, 2008).

³³ On the French forest legislation see (Cnrs), *Les eaux et forêts du 12e au 20e siècle* (Paris: Éditions du Centre national de la recherche scientifique, 1987).

³⁴ The law is the decree 27 May 1811 n. 121 *Bollettino delle leggi del Regno d'Italia*, I, Milano 1811, pp. 417-35. For the operative guidelines and the bureaucratic organization see decrees 5 June 1811 n. 131 and 28 September 1811 n. 236: *Bollettino delle leggi del Regno d'Italia*, I, Milano 1811, pp. 511-39 and *Bollettino delle leggi del Regno d'Italia*, II, Milano 1811, pp. 934-40.

³⁵ Both *beni comuni* and *beni comunali* were subsumed in the property of the newly established municipalities and their management was placed under the strict control of state authorities, cf. Mauro Pitteri, *I boschi comunali e la sovrana risoluzione del 1839*, in Antonio Lazzarini, Agostino Amantia (eds.), *La "questione montagna" in Veneto e Friuli tra Otto e Novecento. Percezioni, Analisi e Interventi*, pp. 117-36 (Belluno: Isbrec, 2005).

³⁶ Alfredo Viggiano, 'Il disegno dei confini. Comunità e ingegneri del censo nel Veneto napoleonico (1806-1813)', *Ateneo Veneto* 8/I (2009): 137-92.

was placed under the control of the prefect of Belluno in the new administrative territorial division introduced by the French³⁷.

As early as January 1812, only a few months after notification of the operative guidelines of the new forestry act, the prefect of Belluno informed the Ministries of Security and Finance of the impossibility of applying the new regulation in the Cadore area, since "the special circumstances of those places, and the kind of cultivation of those woods are in diametrical opposition to the new rules"³⁸.

The same problem was reported again a year later, in a prefectural statement which highlighted the main causes of friction between the legislation and the traditional activities of the population³⁹. The first and most urgent question concerned the selection of the trees to be cut during forest works. The new law placed forestry officers in charge of this operation, but only after shipping agents had exercised their right to reserve certain trees for shipbuilding.

In Cadore, the problem was that 70,000 trees had to be cut down by the end of the spring of 1813, and the strength of the forestry officer workforce was completely inadequate. Exacerbating the difficulty was that almost all the established cutting areas were under a heavy blanket of snow until the end of April.

A second question concerned the tree felling itself and then the transportation of the felled trees. The decree of 5 June 1811 n. 131, which regulated the granting of felling licenses for public forests, limited license auctions to the 'living tree' stage⁴⁰. In other words, merchants had to buy trees still standing in the woods and were then responsible for cutting them down and preparing the logs for the next step in the commercial process. Therefore, they hired private lumberjacks to perform these tasks.

The prefect warned that this method would be the ruination of the entire region since, in most of the municipalities, lease contracts had a clause ensuring the use of local labour in forest works. In the area around the town of Auronzo, where the main forests were located, these operations involved, directly or indirectly, the whole population. Indeed, each household had the right to have at least one of its members employed in these activities and, consequently, to benefit from their proceeds, usually in the form of foodstuffs⁴¹. According to the prefect, not enough merchants were prepared to face the risks associated with the

³⁷ For the administrative reconfiguration of Veneto territory during the French occupation, see Giovanni Netto, 'Le circoscrizioni amministrative del Veneto napoleonico', *Rivista italiana di studi napoleonici* 6 (1967): 129-44.

³⁸ Archivio di Stato di Milano (hereafter ASMi), *Agricoltura, parte moderna*, file folder (hereafter b.) 45, 27 February 1813 (with a reference to an other report dated 23 January 1812).

³⁹ ASMi, *Agricoltura, parte moderna*, b. 45, 27 February 1813.

⁴⁰ *Bollettino delle leggi del Regno d'Italia*, I, Milano 1811, pp. 511-39.

⁴¹ In that period mainly maize: Archivio Comunale di Auronzo (hereafter ACA), *Atti di amministrazione*, 1817, b. 55.

use of an outside workforce (the private lumberjacks), and, in any case, it would have devastating consequences for the local communities.

The final dispute concerned the cutting methods. According to the theories proposed by forestry experts, the new legislation recommended the 'regular section cut'. This was a cutting mode providing for the division of forest areas into sections, which were cut almost entirely cyclically (see a map for the cutting sections in figure 3)⁴². The aim of this system was to calculate mathematically the production capacity of a forest while simultaneously promoting its constant renewal. In contrast to this new approach, the traditional method held sway in Cadore, where single trees were identified for cutting on the basis of commercial criteria.

⁴² See Joachim Radkau, 'Wood and Forestry in German History: In Quest of an Environmental Approach', *Environment and History* 2 (1996): 63-76.

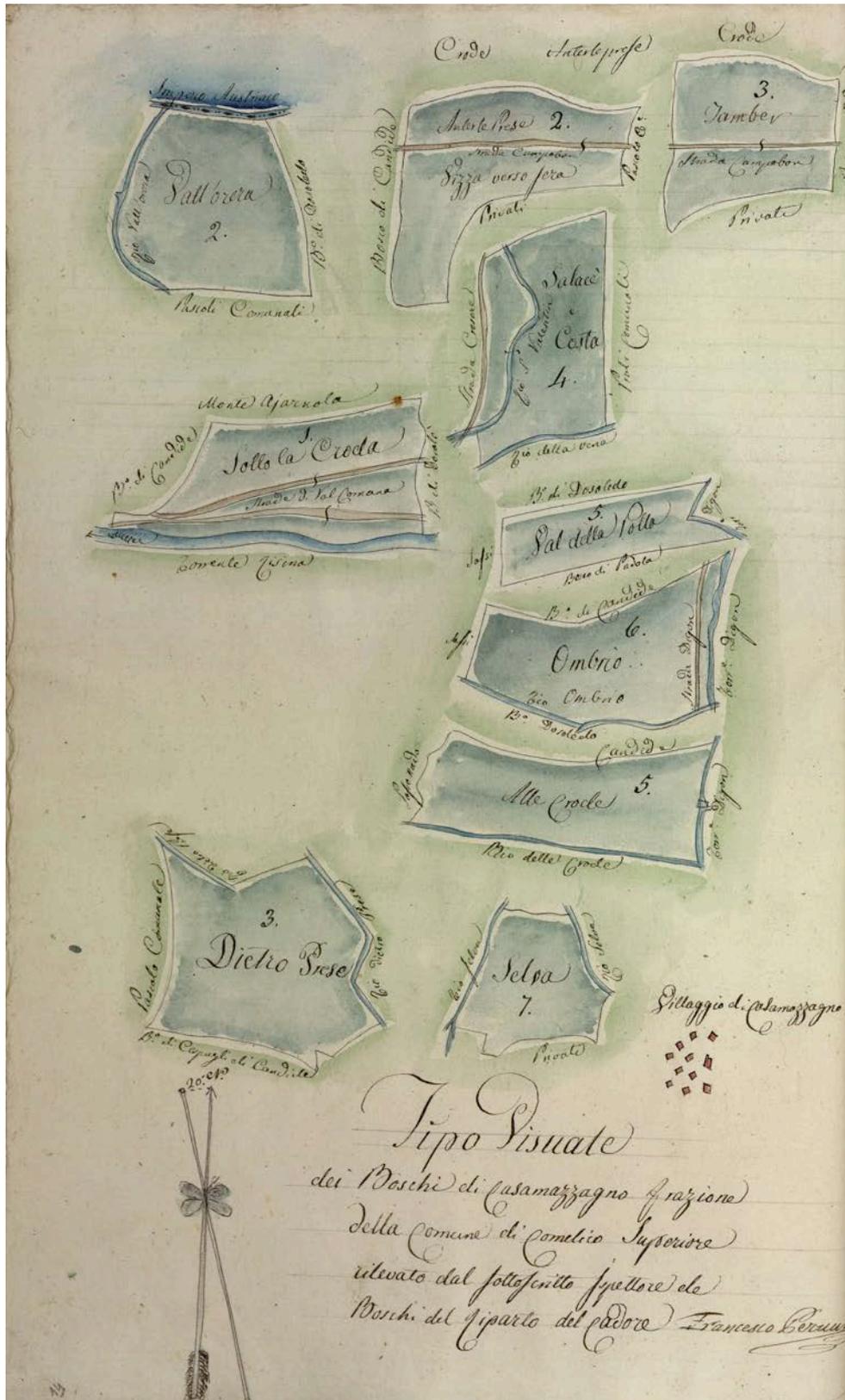


Figure 3: Forestry map for the 'selection cut' method. Source: ACCS, *Corrispondenza*, 1820. Each highlighted area designated a section that was cyclically cut according to forest administration schedule for the sustainable exploitation of the

The old method involved dividing the trees into various cutting classes corresponding to the diameter of the lower part of the trunk. Each cutting class carried its own commercial price, but the price was not proportional to the volume of the tree. It was underestimated for lumber with a diameter of less than 12 ounces (41.8 cm) and overestimated in instances exceeding that dimension. From the practical point of view, this did not prevent abuses, but it discouraged the felling of less mature trees, because if a tree was even a few millimetres short of the diameter of the higher cutting class, its inclusion in the lower class meant a considerable material loss. The merit of this method was that it fixed both the rules for the management of the forests and the parameters for the economic evaluation of the logs⁴³.

On the latter point, the support of the prefect to the local request was explicit:

The forests of the department, and in particular those of Cadore, are nowadays at the highest degree of prosperity, and this situation cannot be attributed to anything but the method by which they are currently utilized. [...] Conversely, if we introduced the section cut method, for every hundred trees we will cut in a given section, only one will be mature; the others will not be suitable either to be useful for shipbuilding, or to be reduced to trunks, or even for firewood⁴⁴.

Therefore, the prefect of Belluno, in anticipation of the visit of the shipping agents, requested enough forestry officers to complete the selection of the trees between May and June, and sought permission to stray from the directive requiring the sale of 'live trees' and to embrace the traditional cutting method of Cadore instead of enforcing the 'regular section' one.

A few days after this communication, the prefect added a supplementary note for the Ministry of Security in which he sounded a note of caution about "the probable uprising we will have to face if the General Directorate of *Demanio* does not agree to the proposed modifications, which are based on the peculiar circumstances of the forests of Cadore and the other lands of this department, which are completely different from those in other forests of the Kingdom"⁴⁵.

In Milan, the capital of the Napoleonic Kingdom of Italy, the authorities were moved to act by the ominous signals coming from the department of Piave. Their decree of 18 May 1813 responded to Cadore's appeals. The government approved the simultaneous selection of trees for the shipbuilding alongside ordinary trees, and it assigned municipal agents to the forestry workforce to expedite the tasks. The 'regular section' cut was confirmed, but with the specification it would only be ap-

⁴³ Mauro Agnoletti, 'Gestione del bosco e segagione del legname nell'alta valle del Piave', in Giovanni Caniato (ed.), *La via del fiume. Dalle Dolomiti a Venezia*, pp. 73-126 (Verona: Cierre, 1993).

⁴⁴ ASMi, *Agricoltura, parte moderna*, b. 45, 27 February 1813.

⁴⁵ ASMi, *Agricoltura, parte moderna*, b. 45, 04 March 1813.

plied to mature trees. Finally, the obligation to auction 'living trees' was revoked.

This was only a temporary solution, however, introduced in response to a situation that was becoming increasingly tense as forest works were delayed by the bureaucratic duties imposed under the new legislation. But there was not enough time to renegotiate or formalize a permanent agreement. In the fall of 1813, the Austrians regained possession of territory that they had been forced to abandon eight years earlier, ending the French occupation of the area⁴⁶.

4. Forestry rules and traditional practices under the Habsburg monarchy

During the Napoleonic period, Cadore was only marginally involved in the military operations⁴⁷; even the great anti-Napoleonic rebellion that upset the nearby Tyrol, in 1809, did not extend to this area⁴⁸. However, the few available sources indicate that strong pressure was exerted on the forest resources during these years⁴⁹. Two main factors contributed to determine this situation. First, the military requirements, given the fundamental role of timber as a raw material in all the strategic assets of war industry at that time, and in particular in the naval shipbuilding (for instance, Cadore firs were highly requested for masts)⁵⁰. Second, the needs of the population and the local communities, which were forced to intensify timber trade activities because of the economic crisis and the sharp increase in taxation that characterized the Napoleonic administration⁵¹.

This condition did not improve in the years immediately following Austrian return, the foundation of Lombardo-Veneto Kingdom, and the beginning of the Restoration (1815). Despite the end of military operations, Cadore was among the areas most affected by the great crisis of the biennium 1816-17. The consequences of the 'year without summer' (1816) were particularly dramatic in Cadore, since the already inadequate agricultural production was further reduced and the prices of foodstuff needed rapidly rose. In this situation, forestry activities re-

⁴⁶ On this period see David Laven, *Venice and Venetia under the Habsburgs. 1815-1835* (Oxford: Oxford University Press, 2002).

⁴⁷ Giovanni Fabbiani, *Il Cadore nell'età napoleonica* (Roma: Magnifica Comunità di Cadore, 1985).

⁴⁸ Marco Bellabarba, et al. (eds.), *Eliten in Tirol zwischen Ancien Régime und Vormärz. Le élites in Tirolo tra Antico Regime e Vormärz* (Innsbruck-Vienna-Bolzano: Studien Verlag, 2010).

⁴⁹ Archivio di Stato di Venezia (hereafter ASVe), *Governo veneto*, 1815, XXXIV, b. 406, 03 March 1815.

⁵⁰ Bollettino delle leggi del Regno d'Italia, II, Milano 1808, p. 598. Cf. Mauro Agnoletti, 'Legnami, foreste e costruzioni navali fra XV e XVIII secolo', in Paola Galetti (ed.) *Civiltà del legno. Per una storia del legno come materia per costruire dall'antichità ad oggi*, pp. 143-70 (Bologna: Clueb, 2004).

⁵¹ ASMi, *Agricoltura, parte moderna*, b. 22, 21 December 1806; ASMi, *Censo, parte moderna*, b. 768, 26 April 1812.

mained almost the only means by which the population could cope with famine⁵².

In the same period, at the beginning of 1816, Austrian decided to restructure the forestry administration in the Lombardo-Veneto Kingdom. Reorganization was restricted to bureaucratic structures, the majority of the staff employed under the French being retained and the forestry act of 1811 effectively being preserved⁵³.

Under the new administration, Cadore was divided into two districts (with country seats in Pieve di Cadore and Auronzo). These two zones were placed under the supervision of a forestry inspectorate, directed by Francesco Perucchi. Perucchi's career illustrates the ambiguities and limits inherent in the new forestry administration during its infancy.

The leading members of the forestry service were generally aristocrats who were well informed about the relevant legislation and the theoretical basis for it. However, there was a lack of personnel with the necessary expertise and experience to oversee operations on the ground. The result of this shortage was that appointed to field positions, sometimes in key roles, often had practical experience but were ignorant of the new silvicultural theories⁵⁴.

Francesco Perucchi fits this profile. Perucchi was born in the village of Nebbiù, near Pieve di Cadore, in 1781. He had been employed in local rural institutions at the tail end of the *ancien régime*, before the administrative transformation implemented under French rule. Moreover, Perucchi had worked in the timber trade before his assignation to the forestry administration. This had two implications. First, he had a good understanding of the previous community based management of forest resources and a keen grasp of the functioning of the timber trade. Second, he had close and continuous contacts in the Cadore area, especially with the people involved in the timber trade. His superiors suspected on several occasions that this contiguity resulted in Perucchi's collusion in various breaches of the forestry act⁵⁵.

That Perucchi enjoyed a deep familiarity with the local context emerges from the first report he sent to the forestry administration board, at the beginning of 1816⁵⁶. The missive began with a historical reconstruction of the legal status of Cadore forests and its evolution during the Venetian epoch. He then proceeded to analyse traditional cutting methods, tree selection criteria, and the rules governing forest works. Finally, Perucchi suggested some modifications to the forestry act as applied in Cadore. He favoured a derogation from the directive requiring the sale

⁵² Giulio Monteleone, 'La carestia del 1816-1817 nelle provincie venete', *Archivio Veneto* 121-122 (1969): 23-86

⁵³ Valentino Guazzo, *Enciclopedia degli affari*, Padova 1853 e ss., sub voce «Bosco», II, pp. 484-541.

⁵⁴ Antonio Lazzarini, *Boschi e politiche forestali. Venezia e Veneto fra Sette e Ottocento* (Milano: Franco Angeli, 2009).

⁵⁵ Francesco Perucchi's curriculum vitae is summarized in Lazzarini, *Boschi e politiche forestali*, 176.

⁵⁶ ASVe, *Ispettorato Generale ai boschi*, 1815-1817, b. 130, folder (hereafter f.) 2.

of 'live trees', easing of the restrictions on grazing in the woods (although he did want to confine goats to the old forests, where the trees were robust enough not to be damaged by the animals), and case by case selection of the regular section or the individual selection cutting method, based on the condition of the forest.

On 19 March, the heads of the forestry administration in Venice responded to Perucchi. They decided to stall, suggesting that the importance of the issues at hand was such that they needed more time to consider the appropriate course of action⁵⁷.

At the end of May, due to delays occurred in the selection of the trees reserved for shipbuilding, cutting operations in the Auronzo district were well behind schedule. On 20 May, the provincial forest offices communicated to their superiors in Venice that cutting authorizations could not be put off any longer "in order to prevent the fatal consequences of a desperate people"⁵⁸.

Ten days later, the district commissioner of Auronzo, at the request of a member of the municipality of San Pietro di Cadore, reminded the provincial delegate of the urgency of the forest works, stressing that this enterprise was the only source for covering the liabilities of the municipalities and a matter of survival for the local population⁵⁹.

When there was no immediate resolution forthcoming, thirteen members of the municipalities of the district of Auronzo delivered a plea to the district commissioner, who forwarded it to the government. The authors complained that red tape had resulted in the passing without result of the designated cutting season, in the days preceding the June moon; this problem had been recurring since the introduction of the forestry act, but it was becoming more acute. According to local representatives, discontent was festering and spreading among those who were the rightful, common owners of the forests on which they depended for their subsistence. The municipalities stated that they did not object to the priorities afforded to shipbuilding as long as these privileges did not obstruct forest works, since delays only increased the pressure on woodcutters⁶⁰.

This contrast of interests exemplifies the clash between the new methods – inspired by forestry science and adopted by central government – and traditional practices revolving around the management of forest resources at the local level. From a 'bureaucratic' point of view, forest works were organized according to predetermined and universally valid standards and deadlines: these applied to cutting requests, shipbuilding selections, cutting authorizations and so on. However, this 'calendar' differed deeply from the empirical one adopted by rural populations and regulated by natural cycles rather than stamps on paper.

While the timelines set by shipbuilding and forest agents for the selection of trees might well have suited the forests of the plains and hills,

⁵⁷ ASVe, *Ispettorato Generale ai boschi*, 1815-1817, b. 130, f. 2.

⁵⁸ ASVe, *Senato di Finanza*, 1816, IV, b. 18, f. IV/10.

⁵⁹ ASVe, *Senato di Finanza*, 1816, IV, b. 18, f. IV/10.

⁶⁰ ASVe, *Senato di Finanza*, 1816, IV, b. 18, f. IV/10.

they did not respond to the needs of the high mountain areas, such as the Cadore region, where snow-cover often persisted until late spring and slowed the selection process. Likewise, silviculture theories did not factor moon phases into the equation of cutting operations. There was some debate on the merits of respective seasons but contemporary scholars did not fully understand the role of moon phases in forestry⁶¹. Cadore's communities, however, realized that it was essential to cut conifers in the days closest to the full moon, in order to facilitate tree debarking as fully as possible.

A timber merchant had explained the benefits of this approach in a letter to the Venetian Senate, more than 60 years earlier:

This is done because in that time the tree is in 'love', and the bark comes off almost by itself, and the wood is in its greatest vigour; so, when the tree is cut and left on the ground as is for about fifteen days, the branches pull out the 'mood' [the sap] and, strip off the bark; then the trunk quickly becomes dried and lightweight, which improves the wood and makes it less difficult and expensive to transport⁶².

The traditional Cadore system, then, followed natural patterns and answered to nature's deadlines. The whole cycle culminated in the spring after the cut (usually in May), when the logs were sold to merchants just as the snows melted, increasing river flows, which in turn aided the movement of the logs⁶³.

Moreover, this system, developed over time and in observance of environmental opportunities and constraints, served the needs of an integrated economy founded on pluriactivity, since it did not overlap with either the short farming season or the seasonal migration practiced by a large proportion of the population. The central authorities in Venice had continuously obstructed cuts, pushing them back until the summer, when the demands of agriculture were more intense⁶⁴.

The district commissioner of Auronzo, Marco Bognolo, along with the provincial delegation, supported the petitions of Cadore's municipalities. Bognolo seemed to favour the concept of communal local ownership of the forests. None of this had any dramatic impact on the central government, which did not show any inclination to acquiesce to local demands. Consequently, as the July moon neared, the inhabitants of the municipality of Comelico Superiore decided to start their cutting operation without official authorization.

⁶¹ Adolfo Di Bérenger, *Studii di archeologia forestale* (Firenze: Accademia italiana di scienze forestali, 1965) (originally published between 1859 and 1863), pp. 478-479.

⁶² Quoted in Antonio Lazzarini, *La trasformazione di un bosco. Il Consiglio, Venezia e i nuovi usi del legno (secoli XVIII-XIX)* (Belluno: Isbrec, 2006), p. 30 n. 27.

⁶³ Giacomo Bonan, 'La gestione di boschi e pascoli nel Comelico della Restaurazione, tra nuovo regime e antiche consuetudini', *Venetica* 28 (2013): 143-67.

⁶⁴ On the alpine integrated economy, see Gauro Coppola, 'Equilibri economici e trasformazioni nell'area alpina in età moderna: scarsità di risorse ed economia integrata', in Gauro Coppola, Pierangelo Schiera (eds.), *Lo spazio alpino: area di civiltà, regione cerniera*, pp. 203-222 (Napoli: Liguori, 1991).

The state authorities established a criminal investigation into what occurred. On 14 July, the investigative team presented itself at the forest office of Pieve di Cadore. It was led by four municipal foresters assisted by two delegates of the municipality. Four days of detective work revealed that between 8 and 10 July, 4,430 trees had been cut down illegally in the various forests of the four hamlets that composed the municipality of Comelico Superiore⁶⁵.

The suspects were the hamlets' inhabitants, who had dramatically reasserted their rights in the face of the increasing interference of forestry administration. The action replicated traditional forms of protest that had implemented in previous centuries, including a typical model of peasant protest: land invasion⁶⁶. Indeed, there were no indiscriminate cuts; the trees felled had been selected according to traditional Cadore criteria: only firs aged between 50 and 60 years and with a diameter between 10 and 12 ounces had been cut down (the criteria most frequently adopted in the traditional Cadore system)⁶⁷.

Faced with a *fait accompli*, the local representatives of the state (the district commissioner and forest inspector) were confronted with two equally unappealing scenarios. The first was to enforce the law, as their public office – not to mention their superiors – obliged them to do. The second was to act on their growing realization that these protests were not the work of a few reckless transgressors, but that there was widespread discontent and an acute sense of grievance shared by the vast majority of the local population. The root of this disquiet, they recognized was the myopic government failure to grant certain exemptions from the application of the forestry act. This thinking was increasingly apparent in the reports sent to Venice:

Since I could not avoid the obligation to report to my superiors [...] of the abusive cutting made by the inhabitants of this municipality, the lauded superiors have noticed with great displeasure this event, [...] and explicitly ordered me to find the leaders and the main perpetrators of so much arrogance and insubordination, and communicate their names to the competent court, to crack down on these arbitrary acts and teach to these people how to follow the sovereign orders. These are the exact instructions I received, and thus you, municipal agent, can understand although I tried as best as possible to justify these blameworthy actions with my superiors, they deemed it necessary to prosecute the promoters of the offence⁶⁸.

⁶⁵ Archivio Comunale di Comelico Superiore (hereafter ACCS), *Corrispondenza*, 1817-1818, 14-17 July 1816.

⁶⁶ For similar cases under the Venetian domination, see Furio Bianco, 'Tumulti, agitazioni sociali e istituzioni comunitarie nel Cadore di fine Settecento', G. Caniato et al. (eds.), *Il Piave*, pp. 228-244 (Verona: Cierre, 2000). Land invasion is a typical form of peasant protest, especially for what concerns lands considered as common resources by rural population (independently by their official legal status), see the model proposed in Eric Hobsbawm, 'Peasant Land Occupations', *Past & Present* 62 (1974): 120-52.

⁶⁷ ASVe, *Direzione Generale del Demanio, Provincie Venete*, 1815-1819, b. 15, f. 6.

⁶⁸ ACCS, *Corrispondenza*, 1817-1818, 14 July 1816.

In this letter, district commissioner Bognolo requested the municipal agent of Comelico Superiore to inform him of the identities of the instigators and the principal promoters of the abusive cut. The tone is more displeased than inquisitorial. Bognolo attributes the desire for retribution solely to his ‘superiors’ and attempts to disassociate himself from any reactionary or repressive measures.

Therefore, it seems reasonable to speculate that Bognolo was not terribly sorry to communicate to his bosses that the inquiry had failed to identify the protagonists of the protest. All of those interrogated had provided a stock answer: “the inhabitants, by mutual agreement, pushed by hunger, necessity, and fear that the authorizations would not arrive at all or at least not in time to put it into effect, all went to the woods together to cut, without being induced by any particular encouragement or instigation”. And when the district commissioner pointed out the criminality of the action committed, he was met with another common response: “they have only cut what is their sacred and unquestionable property, which is violated by the forestry administration, when it persists in denying the population the use of these resources for their subsistence”⁶⁹.

Forest inspector Francesco Perucchi sent a similar report to his superiors and suggested it was better to carry out the work to obtain commercial trunks, since the trees had already been cut down; and when this plan was approved, Perucchi was “pleased” to forward the news to the municipality of Comelico Superiore⁷⁰.

From that point on, the Venetian central administration assumed a more direct role in the saga. In early October, the General Directorate of *Demanio* proposed a compromise solution designed to invoke— at least formally – respect for the law and the forest authorities, while simultaneously pardoning *de facto* the lawbreakers; this fudge was about the only option available to the authorities, unless they wanted to prosecute the entire population of the municipality. As expedient, the government was informed that the cut had been authorized to commence on 1 July, but the notification did not arrive in time in Comelico Superiore. Therefore, although the formal procedure had not been observed, the cut could be considered formally authorized. This was enough for the government to close the proceedings. Abuses had been condoned and, although local administrators were considered co-responsible for what had happened, this was more an issue for future reference than moral sanction⁷¹. The episode was revisited sooner rather than later, however, as it was repeated almost identically a year later.

On 22 May 1817, a member of the municipality of Comelico Superiore informed district commissioner Bognolo of new delays in the authorization of cutting operations. On this occasion, Bognolo chose to entirely

⁶⁹ ASVe, *Senato di Finanza*, 1816, IV, b. 17, f. 1.

⁷⁰ ACCS, *Corrispondenza*, 1817-1818, 30 July 1816.

⁷¹ ASVe, *Senato di Finanza*, 1816, IV, b. 17, f. 1.

disregard institutional protocol. He believed that he had taken all possible precautions against such delays⁷². He had managed to prepare the cutting requests as far back as August 1816. In March 1817, he had convened all the members of the municipality and the informal representatives of the hamlets in his office in order to obtain from them a declaration of responsibility for the “respect of all laws and regulations established by the authorities”⁷³.

Therefore, for the district commissioner, the forestry administration was solely responsible for this situation. In this regard, Bognolo argued that “I believed the forestry administration had been established for the benefit of forests, and then for the welfare of their owners; however, its decisions operate decisively in the opposite direction to this very useful purpose”⁷⁴. His conclusion was equally polemical:

There is no forest agent, even among the most prepared, who will not learn much from the rough Cadore woodcutters about everything concerning conservation, cultivation and growing of trees, and about all the operations and practices related to forest activities⁷⁵.

Bognolo’s dispatch arrived in Venice in early June, accompanied by a supporting note from the provincial delegation.

The government sought advice from the head of the forestry administration and director of *Demanio*, Domenico Aita. In his response of 25 June, Aita dismissed the accusations made by the provincial delegation and the district commissioner and lauded the virtues of forestry administration⁷⁶.

In his view, the population and the municipalities of Cadore were responsible for the delay in the cuts, since they contested the division of the forest into sections, without which “no cut can take place”, as the forestry act of 1811 prescribed. Aita specified that the ‘section cut’ method was something different from a simple clear-cutting, as it was incorrectly interpreted even by some forest agents. Nevertheless, he praised the utility of this and other forestry precepts which “just because they have been recently introduced in these provinces, inevitably encountered great obstacles in the inveterate local customs, in the popular prejudices and in the ridiculous application of incorrect and illogical doctrines”.

In a choice between enforcement of the forestry act and the containment of social unrest, the government preferred the latter. On 19 June, it ordered that, in the case of new delays, the provincial delegation could issue the necessary cutting authorizations without consult-

⁷² ASVe, *Senato di Finanza*, 1817, IV, b. 90, f. 9.

⁷³ ACCS, *Corrispondenza*, 1817-1818, the convocation: 19 March 1817, the declaration: 24 March 1817.

⁷⁴ ASVe, *Senato di Finanza*, 1817, IV, b. 90, f. 9.

⁷⁵ ASVe, *Senato di Finanza*, 1817, IV, b. 90, f. 9.

⁷⁶ ASVe, *Senato di Finanza*, 1817, IV, b. 90, f. 9.

ing forest officers. On 1 July, it criticized the conduct of the forestry administration⁷⁷.

Moreover, some exemptions on the cutting method had already been approved, so that it increasingly resembled the traditional Cadore style. An additional exemption concerned the terms of assignment of forest works in the district of Auronzo. Given the environmental circumstances and the centrality of forest works to the survival of the population, municipalities had autonomy over cutting, preparing and hauling the logs, hence ensuring employment opportunities to locals. This system, called *lavoranzie*, remained in force until the annexation of these territories to the Kingdom of Italy; and it established that at least one person from every family of the different hamlets could participate in the forest works under the direction of a manager elected by these same families⁷⁸.

5. A customary forestry?

The above-mentioned episodes highlight the contrasting interests and practices which had to be reconciled in the early stages of the new legislation. The respective positions of the concerned parties seemed almost diametrically opposed and, initially at least, mutually exclusive. For the forestry administration leadership, proponents of the legislation, viewed the practices of the local population were considered harmful to the forests, whose protection and reproduction could only be assured by strict observation of forestry prescriptions. Local communities experienced the new rules as an unjust incursion and a damaging inhibition to customary forest valorisation activities⁷⁹.

Despite the disconnect between these two cultures appearing so profound, there emerged a third way. Local officials of forest and public administration, such as Francesco Perucchi and Marco Bognolo, who worked closely with the people of Cadore, understood the need to mediate legislation according to the peculiarities of this alpine region. Bognolo, in the context of a government assessment of possible improvements to municipal lands, contended that the communal woods of his district could not be better managed: “these forests, due to the essential role of their products, are regarded as sacred property by the local population, and it is impossible to describe the zealous attention, and the meticulous care with which they are guarded and managed ... forestry administration is unnecessary in my district and could be detrimental to the prosperity and productivity of those same forests”⁸⁰.

⁷⁷ ASVe, *Senato di Finanza*, 1817, IV, b. 90, f. 9.

⁷⁸ ACA, *Atti di amministrazione*, 1818, b. 56, 27 March 1818; ASVe, *Ispettorato generale ai boschi*, 1835-1839, b. 213, f. 27.

⁷⁹ Antonio Lazzarini, ‘Boschi e territorio in area veneta’, in Luigi Blanco (ed.), *Organizzazione del potere e territorio. Contributi per una lettura storica della spazialità*, pp. 159-71 (Milano: Franco Angeli, 2008).

⁸⁰ ASMi, *Censo, parte moderna*, b. 916, 13 May 1818.

In light of the suspicions that their superiors held about Perucchi and Bognolo's connivance in forest crimes, it might be tempting to dismiss their support of local practices as being at least partly designed to facilitate their role in those crimes⁸¹.

To be fair to Perucchi and Bognolo, however, when, in the years that followed, external and more highly qualified forest agents were sent to Cadore to normalize the situation, they reached the same conclusions on the best way to marry the national and the local. For instance, Carlo Malgrani was sent from Belluno to Cadore in early 1820, after 18 years of service in the forestry administration of Udine. Malgrani identified many irregularities in the local management of forest resources and, in some cases, he tried to enforce the legislation. However, when the senior officers of the forestry administration raised the possibility of removing the management of forest work from the municipalities, he discouraged any move in that direction. Malgrani admitted that he had arrived in Cadore with several concerns about local competence but, after observing the thriving condition of the local forest, he had changed his opinion of the traditional cutting method. According to Malgrani, while the old system was more complex than the one proposed by the forestry administration, it enjoyed some advantages; primary among these was that «the population feels like a co-owner of the woods and, therefore, is desirous to preserve this property to hand it down to posterity»; for instance, the locals were very careful not to damage young trees during cutting operations, thus facilitating the regrowth of forests⁸².

Over the course of time, forestry officers, through prolonged exposure to the benefits of local practices, shed many of their prejudices about the local system of valorisation of forest resources. This is not to claim that all the differences between old and new disappeared, however. Rather, despite the diversity of attitudes at play, many officials eventually acknowledged that local activities were not as detrimental to the conservation of forests as they had originally claimed. This reassessment related not only to the economic rationale of limiting short-term profits in an effort to guarantee long-term income; indeed, the local system of valorisation of forest resources had been developed over time and on the basis of constant interaction and engagement with the territory. It was the creation of a population that had learned through experience of both the opportunities connected to forest exploitation and the environmental constraints that should limit such exploitation.

An interesting confirmation of this awareness emerges from a toponymic analysis of the cadastral records. Woods located in strategic areas, usually above villages, were identified by toponyms that emphasized their protective role for the village or indicated the importance of preventing the exploitation of woods: “above the houses” forest, “feet above” forest, “ban” forest, and so on⁸³.

⁸¹ For Perucchi: ASVe, *Direzione Generale del Demanio*, Presidio, b. 559, f. 1156. For Bognolo: ASVe, *Governo*, 1835-1839, XXXV, b. 5085, f. 8/5.

⁸² ASVe, *Direzione Generale del Demanio*, Presidio, b. 559, 20 June 1821.

⁸³ ASVe, *Ispettorato Generale ai Boschi*, 1824, r. 207.

Another aspect concerned the same definition of forest areas and their economic significance. For the forestry administration, forests were only sites for timber exploitation or, at least, for timber conservation. This 'timber mine' idea was incompatible with other activities in forest areas⁸⁴.

In customary agrarian regimes, on the contrary, woods were multi-purpose areas, and the ability of rural populations to activate forest resources through a range of skills resulting from a close bond with the territory has been described as "multiple use of forest resources"⁸⁵. Local communities prioritized the harvesting of timber from the forests, both for domestic use and as a trade commodity, but this was complementary and compatible with other activities, hard to quantify in monetary terms, but essential in the integrated alpine economic system: hunting and gathering foodstuffs, medical products (berries, herbs, mushrooms, acorns, walnuts or hazelnuts etc.), resins, tannin, turpentine, litter and animal fodder⁸⁶.

However, the most common non-timber forest activity practised by locals was that most heavily excoriated by forestry treatises, namely pasture. For forest technicians of the time, animals in general, and small ones in particular, were the main 'enemies' of forests and the first cause of their deterioration⁸⁷. Where there was wood, there could be no grazing. The forestry act of 1811 committed to this line and put severe restrictions on the presence of animals in the forests, emphasizing the role of goats, which were considered 'the scourge of the woods'⁸⁸.

The dichotomous relationship between forest and grazing areas described in the forest legislation of the day was not reflected in the numerous everyday practices in which these two elements were complementary. For two reasons, this situation was especially evident in mountain areas. The first concerned bovine grazing ground, because most of the forestland was a transit zone connecting the meadows near the villages to the high-mountain pastures, above the altitude limit of the forests, where cattle grazed during the summer⁸⁹.

⁸⁴ Marco Armiero, 'Seeing Like a Protester: Nature, Power, and Environmental Struggles', *Left History* 13/I (2008): 59-76.

⁸⁵ Diego Moreno, 'Activation. Practices, History of Environmental Resources, and Conservation', in Glauco Sanga, Gherardo Ortalli (eds.), *Nature knowledge: ethnoscience, cognition and utility*, pp. 386-90 (New York: Berghahn Books, 2003); A. Torre, 'Un "tournant spatial" en histoire?', *Annales. Histoire, Sciences Sociales* 5 (2008): 1127-44.

⁸⁶ Giacomo Bonan, 'The communities and the comuni: The implementation of administrative reforms in the Fiemme Valley (Trentino, Italy) during the first half of the 19th century', *International Journal of the Commons* 10/II (2016): 589-616.

⁸⁷ Bruno Vecchio, 'Forest Visions in Early Modern Italy', in Marco Armiero, Marcus Hall (eds.), *Nature and History in Modern Italy*, pp. 108-25 (Athens: Ohio University Press, 2010).

⁸⁸ In particular section 33, see *Bollettino delle leggi del Regno d'Italia*, I, Milano 1811, pp. 424-5.

⁸⁹ Jon Mathieu, *History of the Alps, 1500-1900: Environment, Development, and Society* (Morgantown: West Virginia University Press, 2009); Luca Mocarrelli, 'Spazi e diritti collettivi nelle aree montane: qualche riflessione su Alpi e Appennini in età moderna', *Proposte e Ricerche* 36 (2013): 173-202.

The second factor related to that nemesis of forestry experts, the grazing goat. In the mountains, the use of less dense forest areas for grazing goats saved what productive land there was for growing crops and hay-making for cattle. Undoubtedly, goats caused damage to forestland, especially to young trees, but they also played an important role for the community at large. Since few families could afford to maintain a cow, ownership of a goat could guarantee an adequate food supply to the most needy people. For this reason, goats were known as ‘cows of the poor’⁹⁰.

The forestry administration continued to highlight the harmful impact of goats on woodland but as they came to understand the relevant local intricacies, the idea of a total ban on goats was abandoned in favour of trying to establish limits that were compatible with community needs. Domenico Aita outlined the realities of the situation to his staff:

Although the directives of *Demanio*, with its regard only for the welfare of forests, wished to bar animals from woodlands, and goats in particular, it has been forced to confess their immediate exclusion would be both impossible and harmful. Impossible because, whatever the surveillance, these animals are too many and too unruly to keep them out of the woods. Harmful because leaving so many animals with no food would cause incalculable damage to private owners and the public economy⁹¹.

However, the most significant attestation to the legitimacy of certain customary practices arrived, some decades later, courtesy of Adolfo di Bérenger, the highest profile Italian forestry figure.

Born in Bavaria in 1815 to a family of exiled French nobles, Bérenger studied in the forestry academy of Mariabrunn (near Vienna), but he spent his entire career in Italy. After a brief period of service at Duchy of Parma, he joined the Veneto forestry administration, initially as an inspector and subsequently as deputy director. After the annexation of the Veneto to the Kingdom of Italy (1866), he was appointed as a director of the first national forestry academy and he is considered the founder of Italian forestry⁹².

Bérenger’s reputation was not limited to the Italian peninsula. For instance, his theories influenced the founding father of American conservationism, George Perkins Marsh, who was friendly with Bérenger during his years in Italy and who praised Bérenger’s book, *Studi di ar-*

⁹⁰ Cf. Michele Corti, ‘Risorse silvo-pastorali, conflitto sociale e sistema alimentare. Il ruolo della capra nelle comunità alpine della Lombardia e delle aree limitrofe in età moderna e contemporanea’, *Annali di San Michele* 19 (2006): 234-340; Diego Moreno, Giuseppina Poggi, ‘Storia delle risorse boschive nelle montagne mediterranee: modelli di interpretazione per le produzioni foraggere in regime consuetudinario’, in Simonetta Cavaciocchi (ed.), *L’uomo e la foresta. Secc. XII-XVIII*, pp. 635-653 (Firenze: Le Monnier, 1996).

⁹¹ ASVe, *Senato di Finanza*, 1824, XI, b. 672, f. 1/2.

⁹² For biographical information, see Mauro Agnoletti, ‘Fra storia e tecnica: sviluppi e tendenze della storia forestale’, in Mauro Agnoletti (ed.), *Storia e risorse forestali*, pp. 1-36 (Firenze: Accademia Italiana di Scienze Forestali, 2001).

cheologia forestale, as the “most learned work ever published on the social history of forestry”⁹³.

For talent and competence, di Bérenger was unmatched in Italian forestry. But he was not an exception in respect of background or training. His curriculum vitae, for the early phase of his career at least, is broadly representative of the generation of forest officers who followed that of Francesco Perucchi. Indeed, with the consolidation of forestry administration, the quality of its personnel increased. Its selection criteria favoured the recruitment and promotion of persons with adequate theoretical training. Initially, engineers graduated at the University of Padua; by the late 1830s, the preferred candidates were graduates of the forestry academy at Mariabrunn, among them Adolfo di Bérenger⁹⁴.

Bérenger’s theoretical training, then, was based entirely on the German model and he generally quoted German authors in his work. In fact, the only experts really taken into account by the Lombardo-Veneto forestry administration were German⁹⁵. This was the context of Bérenger’s consistently unsympathetic criticism of the abuses committed by rural populations, timber merchants and even local administrators⁹⁶. At the same time, however, it is possible to identify in his writing an evolution in his thinking. Gradually, he came to see the merits of a hybridization of forestry, and the value and validity of the assimilation and codification of empirical practices in league with the theoretical dictates of his studies.

Most of Bérenger’s service was in mountain areas, including the Cadore district (1849-1856)⁹⁷. In the light of the historical and environmental peculiarities of the Italian peninsula, especially its mountain regions, he came to understand that Italian forestry policy could not be a simple copy of theories developed in – and for – a totally different territorial context.

For instance, for coniferous forests, after he had observed their respective economic and environmental results, Bérenger favoured the Cadore traditional cutting method (with the addition of sectional division) over the clear-cutting method of German forestry⁹⁸.

Another example of this pragmatism emerges in Bérenger’s deliberations on the role of moon phases in cutting operations. While reiterating that the most eminent forestry scientists (Duhamel, Heyer, Sauer,

⁹³ On this relationship see Marcus Hall, ‘Restoring the Countryside: George Perkins Marsh and the Italian Land Ethic (1861–1882)’, *Environment and History* 4 (1998): 91–103 (the quote is on p. 94).

⁹⁴ Lazzarini, *Boschi e politiche forestali*, 111–94.

⁹⁵ The volumes bought for the library of forest administration headquarter were indicative of this trend: almost all the books were in German, so that it was necessary to purchase an Italian-German dictionary, ASVe, *Prefettura delle finanze*, 1857–1861, XXX, b. 947, f. 9/2.

⁹⁶ ASVe, *Ispettorato generale ai boschi*, 1850–1854, b. 410, f. 43; ASVe, *Prefettura delle Finanze*, 1862–1866, XXVIII, b. 1445, f. 2/40.

⁹⁷ ASVe, *Ispettorato generale ai boschi*, 1845–1849, b. 330, f. 59.

⁹⁸ Adolfo di Bérenger, *Nuovo metodo di tassare i boschi ed assestarne l’economia* (Forlì: Febo Gherardi, 1871). On this, see also Lazzarini, *Boschi e territorio*, 170.

Shübel) doubted the effects traditionally attributed to the moon phases, Bérenger added a qualification:

However, it is judicious not to wholly reject such solemn opinion, consecrated by the authority and the consensus of the centuries, and rooted in the traditional elements of the primitive science of peoples. With all due respect to the importance of modern theories, they are not enough to refute such a constant conviction of peoples and writers⁹⁹.

6. Conclusions

Studies on Western Europe's forests during the modern period frequently indicate the last third of the nineteenth century as the epoch in which scientific forestry completely imposed itself at the expenses of customary practices. Even if such studies highlight the active role played by rural communities in redefining silvicultural precepts, they seem to link the crisis that characterized the economies mainly based on forest activities with the abandonment of local knowledge in this field *tout court*¹⁰⁰.

In those decades, the economic decline of forest activities involved also the Cadore area. However, behind this there were several reasons, mainly related to demographic and economic trends such as, in particular, the radical transformation of European timber trade system. In that period, the development of the first continental railway network connected North-Eastern Italy with the broad forest areas of Central-Eastern Europe¹⁰¹. This marked the end of the competitive advantages of Cadore and other Alpine valleys, which was based on the low transport costs insured by the waterway network¹⁰². From then on, the main employment opportunities in Cadore area were pursued with intensification in temporary migration and growth of pastures at the expense of the woods¹⁰³. This process did not involve only Cadore, since the pro-

⁹⁹ Bérenger, *Studii di archeologia forestale*, 479.

¹⁰⁰ Cf. Armiero, *Il territorio come risorsa*; Kieko Matteson, *Forests in revolutionary France. Conservation, community, and conflict 1669–1848* (New York: Cambridge University Press, 2015); Harriet G. Rosenberg, *A Negotiated World: Three Centuries of Change in French Alpine Community* (Toronto: University of Toronto press, 1988); Sansa, *L'oro verde*; Laurent Simon, Vincent Clément, Pierre Pech, 'Forestry disputes in provincial France during the nineteenth century: the case of the Montagne de Lure', *Journal of Historical Geography* 33 (2007): 335-51.

¹⁰¹ A. Schram, *Railways and the Formation of the Italian State in Nineteenth Century* (Cambridge: Cambridge University Press, 1997).

¹⁰² Mauro Agnoletti, *Commercio e industria del legname fra XIX e XX secolo nell'Italia nord-orientale: aspetti tecnici e scelte imprenditoriali*, in Giovanni Luigi Fontana, Andrea Leonardi, Luigi Trezzi (eds.) *Mobilità imprenditoriale e del lavoro nelle Alpi in età moderna e contemporanea*, pp. 31-45 (Milano: Clup, 1998).

¹⁰³ Antonio Lazzarini, *Crisi della montagna bellunese e cause dell'emigrazione*, in Casimira Grandi (ed.), *Emigrazione, Memorie e realtà*, pp. 189-215 (Trento: Provincia autonoma di Trento, 1990); Andrea Zannini, *La grande frattura. La demografia nel Bellunese dell'Ottocento rivisitata*, in Antonio Lazzarini, Agostino Amantia (eds.), *La "ques-*

gressive shift of timber transport from waterways to railways was a continental transformation, whose repercussions on the different European regions deserve further insights¹⁰⁴.

Concerning the institutional aspects, there is no doubt that the growing presence of state authorities in forest exploitation processes resulted in an equally broad reaction from rural communities, the intensity of which depended on the importance of these resources in the life of the local population. This antagonism produced not only divergence but also convergence, in which local representatives of the state apparatus played a central role, since they were aware of the need for flexible application of the legislation to ensure economic and social stability in the territory concerned. In the long run, this dialogue – as fractious as it was – resulted in the rural population playing an active role in redefining the short-term trends of forestry and influencing its long-term development¹⁰⁵.

The attention paid by silvicultural science to local practices became increasingly visible during the twentieth century. For instance, already in the 1930s, Arrigo Serpieri, the most well known and influential Italian agronomist and forester of that time, wrote:

I believed, and I still do, that we cannot implement in our mountains the same forest policy as France or Germany because our forest policy cannot be disconnected from the integral needs of mountain economy and life. We cannot defend and enlarge our forests, although these measures would be fundamental for their protection, against mountaineers and their lives¹⁰⁶.

As Kieko Matteson has shown, in France, from the 1960s, public authorities have started to support many of the customary practices harshly fought by nineteenth century forestry administration (in particular silvopastoralism) to archive several social and environmental

zione montagna" in Veneto e Friuli tra Otto e Novecento. Percezioni, Analisi e Interventi, pp. 209-33 (Belluno: Isbrec, 2005).

¹⁰⁴ For what concerns business history, see Luciano Segreto, *The Feltrinelli – Going Global with the Timber Trade. How to Build a Fortune Using a Scarce Resource (1854-1942)*, in Christina Lubinski, Jeffrey Fear, and Paloma Fernandez Perez (eds.), *Family Multinationals. Entrepreneurship, Governance, and Pathways to Internationalization*, pp. 154-68 (New York: Routledge, 2013).

¹⁰⁵ In other words, to quote Tamara Whited, “some representatives of the state did not always play by the rules written by other representatives and that peasants often appropriated the state’s language and at times sought their own integration with official structures”, Whited, *Forests and Peasant Politics*, p. 5. For similar considerations, cf. Hölzl, *Forests in Conflict*; Hal Rothman, *"I'll Never Fight Fire with My Bare Hands Again": Recollections of the First Forest Rangers of the Inland Northwest* (Lawrence: University Press of Kansas, 1994); Renato Sansa, ‘Agronomi o agrimensori? La percezione dei saperi contadini e delle pratiche locali nell’amministrazione pontificia tra Sette e Ottocento’, *Acta Histriae* 17 (2009): 399-410.

¹⁰⁶ Quoted in Marco Armiero, *A Rugged Nation: Mountains and the Making of Modern Italy* (Cambridge: White Horse Press, 2011) p. 117.

benefits for the forests, especially in the mountain areas; a strategy that has been adopted even at the European level in the last decade¹⁰⁷.

In this respect, a genealogical observation of forestry evolution, from eighteenth century to the present, allows for another meaningful parallelism. It involves a concept widely used today, namely sustainability, which originated with the dawn of scientific forestry and concerned the aim of obtaining as much timber as possible from a forest without compromising its future productivity¹⁰⁸.

As we have seen, the primary aim of nineteenth century forestry was economic sustainability¹⁰⁹. For instance, even the most qualified forestry administrators of the Lombardo-Veneto Kingdom, hypothesized repeatedly about the commercial advantages of clearing entire beech forests and replacing them with fir trees. Today, such thinking would appal forestry experts¹¹⁰. Moreover, as we have seen, the interests of forestry were oriented to an economic sustainability that would satisfy both state and market demands. The consequences of these interventions on the social and economic sustainability of the population living close to forest areas did not initially concern forestry experts.

In this sense, if we contextualize official rhetoric on the sustainable use of natural resources against its application on the ground, it becomes clear that the idea of sustainability, then as now, is never fixed but that it is a moveable feast, an ongoing process of conflict resolution and positional negotiation.

¹⁰⁷ Kieko Matteson, *Forests in revolutionary France*, pp. 262-4.

¹⁰⁸ See the different opinions in Joachim Radkau, 'Germany as a Focus of European "Particularities" in Environmental History', in Thomas Lekan, Thomas Zeller (eds.) *Germany's Nature: Cultural Landscapes and Environmental History*, pp. 17-32 (New Brunswick: Rutgers, 2005); Paul Warde, 'The Invention of Sustainability', *Modern Intellectual History* 8 (2011): 153-70; Donald Woster, *The Shaky Ground of Sustainable Development*, in Donald Woster, *The Wealth of Nature. Environmental History and the Ecological Imagination*, pp. 142-55 (New York: Oxford University Press, 1993).

¹⁰⁹ Richard Hölzl, 'Historicizing Sustainability: German Scientific Forestry in the Eighteenth and Nineteenth Centuries', *Science as Culture* 19/IV (2010): 431-60.

¹¹⁰ Furio Bianco, Antonio Lazzarini, *Forestali, mercanti di legname e boschi pubblici. Candido Morassi e i progetti di riforma boschiva nelle alpi carniche fra Settecento e Ottocento* (Udine: Forum, 2003).