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# Dire Necessity or Mere Opportunity? Recurrent Peat Commercialisation from Raised Bog Commons in the Early Modern Low Countries

RESEARCH ARTICLE

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## ABSTRACT

Commercialisation of resources taken from commons is considered problematic in several ways in traditional commons scholarship. In particular common-pool resource (CPR) theory argues that institutions for collective action such as commons are largely autonomous, experiencing little influence from either the market or the state, and focusing only on the needs of entitled (local) communities. Consequently, commercialisation and sustainable collective use of common-pool resources are largely considered incompatible. Moreover, the dominant focus of CPR theory is on renewable resources rather than non-renewable resources such as peat. Although commons scholarship has broadened over the last decades and come to more nuanced views on the state-market-common trichotomy, our study adds historical depth and does pay attention to peat as a valuable non-renewable resource. We analyse historical sources on two cases of peat commercialisation from raised bog commons in the early modern Low Countries: the *Bakelse gemeint* in the Dutch Peel region, and the *commune de Xhoffraix* in the Belgian Hautes-Fagnes. In terms of volume, the share of commercialised peat in the total peat exploitation was limited; the significance of peat commercialisation lay in its permanence, recurrence, and/or regional outreach. Taxes and high debts placed communities in dire financial straits, which was one of the motives for peat commercialisation. In addition, state institutions could intervene in commons management if there was an (internal) conflict. Sources indicate that these institutions had a pragmatic attitude towards peat commercialisation, probably to foster social harmony and local prosperity in times of resource contestation and economic hardship. This study adds a novel intermediate category of peat exploitation to the traditional binary subdivision in domestic peat extraction from commons versus large-scale commercial exploitation of privatised bogs. We demonstrate that long-term use of common-pool resources could go together with a moderate degree of commercialisation. Rather than being fully autonomous, commons in the early modern Low Countries were – permanently or at times of internal conflict – clearly impacted by markets, notions of private user rights, and state institutions.

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## 1. INTRODUCTION

Peat soils in general and raised bogs in particular covered a significant part of the common land area in Northwest Europe until well into the nineteenth and twentieth centuries.<sup>1</sup> These wetlands contained a resource of potential economic value beyond the subsistence economy of local rural communities, namely peat fuel (Gerding 1995: 366; Rotherham 2009: 9). The harvesting and appropriation of this fuel through history is generally seen as a binary phenomenon, placing small-scale domestic sustenance extraction from commons opposite large-scale commercial peat exploitation from privatised bogs (Rotherham 2009: 22; Joosten 2019: 104–106). This paper discusses a hitherto largely overlooked third way of peat exploitation: small-scale market-oriented peat extraction from common lands alongside domestic use of these grounds.

This topic adds a new perspective as commercialisation of resources taken from commons is generally considered problematic in traditional commons scholarship. In particular common-pool resource (CPR) theory argues that institutions for collective action such as commons are largely autonomous, experiencing little influence from either the market or the state, and generally focusing only on the needs of entitled (local) communities. Consequently, commercialisation and sustainable collective use of common-pool resources are largely considered incompatible. Moreover, CPR theory focuses on renewable resources rather than non-renewable goods such as peat (e.g. Ostrom 1990; Poteete et al. 2010; Rodgers et al. 2011: 9; De Moor 2015).

Partly building on this traditional work, commons scholarship has over the last decades developed into a large and diversified research field (Quintana and Campbell 2019; Van Laerhoven et al. 2020). The trichotomy state-market-common (or community) is now seen by many as artificial, and various authors have discussed contemporary hybrid forms of natural resource management (Lemos and Agrawal 2006; Driessen et al. 2012; Villamayor-Tomas et al. 2019). A more nuanced view of the commons' autonomy and relations with the state and markets has thus emerged.

This paper addresses two specific lacunae in understanding commercialisation of common-pool resources. First, the currently emerging nuanced picture is lacking historical resonance since most commons scholars study present-day cases using a socio-economic lens (Van Laerhoven et al. 2020). This paper will delve into the specific history of practices of commercialisation, examining how different actors and institutions responded to it in the past and what can be learned from this for present-day situations of common-pool resource commercialisation. Second, commons scholarship to date mainly focuses on

'the big five', a select group of preferred topics: fisheries, forests, irrigation, pastureland, and water (Van Laerhoven et al. 2020). In comparison, raised bog commons and their peat (fuel) resources have been markedly understudied. This contrasts starkly with the historical predominance and economic importance of these wetlands in Northwest Europe.

Against the background of renewed societal interest in commons in the wake of the global financial crisis (De Moor 2015: xiii; Bregman 2020: 309–15), this paper will analyse historical sources concerning two local cases of peat commercialisation from different raised bog regions in the Low Countries.<sup>2</sup> The available peat commercialisation data caused us to put the emphasis on the first half of the seventeenth century in one case and on the second half of the eighteenth century in the other. However, in both cases we also zoom out to the wider (early) modern period. The spatiotemporal setting of our study is particularly apt for two reasons. Firstly, a commercial economy strongly developed in this part of Europe since the late Middle Ages (Hoyle 2010: 362–6; De Moor 2015: 54). Secondly, bog commons were relatively abundant in the early modern Low Countries.<sup>3</sup>

To operationalise our research, we formulate the following research questions:

- (1) What was the property and use rights situation of the studied bogs?
- (2) To what degree and in which ways was commercialisation of peat taken from the commons significant?
- (3) Which were the motives for and attitudes towards peat commercialisation of the main actors involved?
- (4) What was the long-term impact of commercialisation on the studied peat resources and common-pool institutions?

## 2. BACKGROUND: HISTORICAL RESEARCH ON THE COMMONS-STATE-MARKET INTERSECTION

Traditional commons scholarship, and notably common-pool resource (CPR) theory, provides arguments for why local communities developed self-governance of collective resources, why commons were meant to exclusively serve the needs of entitled users, and why commercialisation of goods from commons was forbidden. In late medieval and early modern Europe, resource management solutions offered by markets or governments were either not available or emergent, and therefore not sufficiently reliable. Consequently, and according to CPR theory,

appropriators formed autonomous self-help groups for resource governance (De Moor 2015: 3, 12, 38). Rural commons in CPR theory are considered to exclusively serve the needs of entitled – mostly local – people, because commons are understood as of vital importance to their farming systems and functioning as an insurance for the poor (Svensson and Gardiner 2009: 22; De Moor 2015: 59; Grüne et al. 2015: 277). Commercialisation of goods taken from commons was therefore strictly banned to protect valuable and depletable resources, and ensure sustainable management (Van Zanden 1999: 131; De Moor 2015: 54, 59, 93; De Keyzer 2018: 1, 4). Accordingly, CPR theory sustains the view that commons were very autonomous, without much interference of the state or the market; that commercialisation and sustainable collective use of common-pool resources were largely incompatible; and that common lands were primarily of local economic importance.

Historians and non-historians alike have convincingly argued that by focusing strongly on common-pool institutions, CPR theory neglects the role of historical, political, economic, ecological, and other contexts in the development of successful common resource management systems (McCay 2002: 361; Rodgers et al. 2011: 199; Grüne et al. 2015: 291–292; De Keyzer 2018: 45; Quintana and Campbell 2019: 1114–1115). Consequently, more attention needs to be paid to how rural commons in the past were used in everyday practice, and how they linked with markets and governments on a supralocal scale.

As to the political-economical context of common-pool institutions and concerning the degree of (approving) lordly or state influence on commons regulations, there was considerable regional variation across Europe. Often, such influence went beyond the merely supportive attitude of external governmental authorities towards commons underlined by e.g. Ostrom (1990: 90) and De Moor (2015: 38). In many regions, territorial lords had a decisive and sometimes coercive impact on the institutional organisation of commons and the way resources could be used (Grüne et al. 2015: 277), because they claimed the property right of non-reclaimed land. Also, extreme taxation during war periods could force commons to sell their resources (Van Zanden 1999: 133–4, 136).

By contrast, commercial relations of commons have received less attention in historical studies (Hoyle 2010; Brakensiek 2015: 62). While stressing the prohibition to commercialise goods taken from commons, De Moor (2015: 93) also warns that ‘common land may not be regarded as functioning outside the market system’. Examples of the latter are provided by Hoppenbrouwers (2002: 90–1) and De Keyzer (2018: 21, 74–7). The latter author found that

modest commercial sheep breeding did not jeopardise the success of common resources and institutions in a sandy region of the Low Countries. But other resources in the common lands she studied apparently ‘offered fewer commercial opportunities than grazing’ (De Keyzer 2018: 40). These outcomes raise the question to what degree, under which conditions, and in which form commons and markets could become interlinked. The literature presents a range of potential interactions. While Van Zanden’s example indicates motives of financial need, De Keyzer’s work suggests that commercialisation of goods from commons could be a lasting and everyday phenomenon. In that case, it may fit in with the notion of a ‘commercial survival economy’ as coined by Thoen (2001). Others even stated that commoners took any opportunity to produce goods for the market (Grüne et al. 2015: 276). In brief, current understanding of conditions and drivers for the commercial exploitation of goods from historical commons is deficient, as it lacks comprehension of motives and attitudes of individuals and common-pool institutions involved in relation to the wider economic and institutional settings.

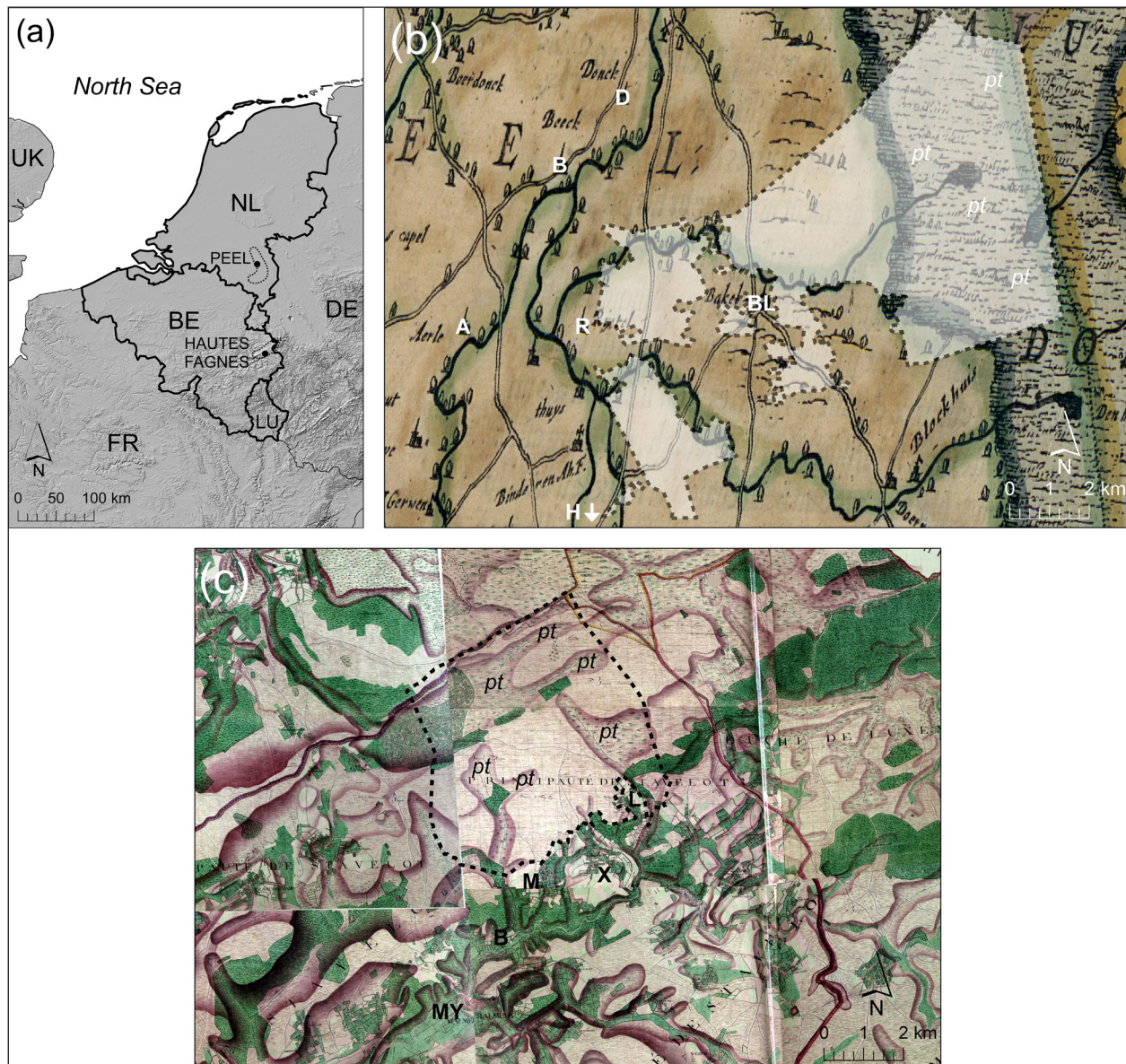
### 3. CASE STUDY AREAS

The methodology for selecting the two case studies and the associated sources is described in detail in Appendix 1. The selected local cases (*Figure 1*) are the *Bakelse gemeint* (located in the Peel in the present-day Netherlands) and the *commune de Xhoffraix* (in the Hautes-Fagnes, in present-day Belgium).<sup>4</sup> Their geographical and historical contexts are described in this section.

#### 3.1. BAKELSE GEMEINT

The *Bakelse gemeint* comprised a lowland bog and heathland common in the Peel region (south-eastern Netherlands; *Figure 1a, b*). The Peel commons supplied various resources to the agricultural subsistence economy of neighbouring communities. On these lands sheep and cattle were grazed, beehives were placed, sods for manure production and building materials were gathered, and fuel was collected (Renes 1999: 182, 184; Van Zalinge-Spooren 2018: 133). Peat cutting in the Peel region is documented from the fifteenth century onwards (Renes 1999: 193). Its growing importance was related to strongly declining local wood supplies due to demographic pressure since the high Middle Ages (Joosten 1989: 331; Vera 2011: 429).

Historically, the *Bakelse gemeint* was at the north-eastern limit of the duchy of Brabant. In the early seventeenth century, the temporal focus of our case study,



**Figure 1a:** Location of the Peel and Hautes-Fagnes bog regions (dashed lines) within the Low Countries, and of the two local case study areas within the bog regions. **1b:** *Bakelse gemeint* (transparent white area) projected on a map by Hondius (1639). Entitled communities: BL = Bakel; A = Aarle; R = Rixtel; B = Beek; D = Donk; H = Helmond. **1c:** The *commune de Xhoffraix* on the Ferraris map (1777). Entitled village communities: X = Xhoffraix; M = Mont; L = Longfaye; B = Bévercé. MY indicates the town of Malmedy. In 1b and 1c, dashed lines indicate the limits of the studied commons, while pt indicates peatlands. The image of the Ferraris map is not based on the official digital version of the Royal Library of Belgium (KBR), but has been reproduced from Ferraris and Bracke (2009). As the copyright holder of the atlas and the maps therein, KBR has kindly permitted use of this image.

three communities were using the common at equal rights. These were the village communities of Bakel and of Aarle-Rixtel (including Beek and Donk), and the town of Helmond (Van Zalinge-Spooren 2018). In 1648, the States-General succeeded the duke of Brabant as the sovereign, and the case study area became part of a Generality Land of the Dutch Republic.

The main study period (1608–1620) saw economic and demographic recovery amidst a longer period of war and turbulence in the Peel region (Adriaenssen 2008: 276). The

1651 house count, the closest available to our main study period, numbered 238 houses for the community of Bakel (Dussart 1947: 72–73). Around 1700, the wider Peelland region had a population density of 34 inhabitants per km<sup>2</sup> (Van Xanten and Van der Woude 1965: 25, 42).

### 3.2. COMMUNE DE XHOFFRAIX

The *commune de Xhoffraix* is in the Belgian Hautes-Fagnes, an upland area on the north-eastern fringe of the Ardennes massif (Figure 1a, c). There were prominent stretches of

naturally wooded dryland separating the non-wooded bogs in the Hautes-Fagnes. The late medieval and early modern period witnessed strong deforestation, driven by charcoal production for the regional iron industry, by other developing industries, and by extensive land use forms (like those in the Peel region). As a result, both drylands and wooded wetlands became more open. By the 1770s, non-wooded common lands were dominant in terms of surface area (Robert 1963; Schumacker and Streel 1994: 12, 16–19). Although these are generically named *fagne* (literally *peatland*), not all were peatlands. Peat cutting in the Hautes-Fagnes is documented from the late sixteenth century onwards (Abbaye de Stavelot-Malmedy 1583a, b), but may have started locally over 200 years earlier (Hindryckx and Streel 2000). As in the Peel, its importance grew as wood became scarcer. Although coal mining had existed around Liège and Aachen (some 30–40 km away) since the Middle Ages, coal was only introduced in the Hautes-Fagnes as a fuel on a larger scale around 1880 (Hoyois 1953: 558).

Historically, the south-western Hautes-Fagnes (including the *commune de Xhoffraix*) were part of the ecclesiastical principedom of Stavelot-Malmedy. The *commune de Xhoffraix* was used collectively by nearby communities (Figure 1c). In 1780, the villages of Xhoffraix, Mont, and Longfaye were listed as such (Polain 1864: 354), while the common was also used by the village of Bévercé. Although a 1583 princely ordinance even allowed Malmedy townsmen to cut peat on this common (Abbaye de Stavelot-Malmedy 1583b), it seems unlikely that they routinely did so during our study period.<sup>5</sup>

Around 1777, the four villages using the common counted 156 houses (cf. Ferraris and Bracke 2009), with an average population density in the study area of around 25 inhabitants per km<sup>2</sup>.<sup>6</sup> Between 1750 and 1800, the region's population increased by c. 25 per cent (Hansotte 1987: 360, 374). Although the study period (1754–1793) was a time of relative peace, passing armies and billeted troops intermittently placed a heavy burden on the local population (Nekrassoff 2017: 21–22) and the economic situation gradually worsened due to demographic growth and periods of bad harvests (Butil et al. 1992: 52).

## 4. RESULTS

### 4.1. PROPERTY AND USE RIGHTS OF THE BOG COMMONS

Both study areas and periods exhibited similar property and use rights situations. In both cases formal property was claimed by the respective territorial lords (Hansotte 1987: 361–2; Van Zalinge-Spooren 2018: 44, 48). In 1326, the duke of Brabant formally granted the right to

collectively use the *Bakelse gemeint* common to several nearby communities. These were Bakel on the one hand, and a collective of the communities of Aarle, Rixtel and Beek on the other. That same year, the community of Helmond bought in without the duke's involvement (Van Zalinge-Spooren 2018: 228, 255). Similarly, the prince-abbot of Stavelot-Malmedy had granted common land-use rights to local communities in his territory as well. In both cases, the entitled user communities had to pay a yearly remuneration and/or rend services to the lord (Abbaye de Stavelot-Malmedy 1736–1766; Hansotte 1987: 361–2; Krom and Sassen 1884: 15–17).

Of particular interest to both studied commons were the parcellations that existed to allot the common lands to user communities or even individual users. These reflect user rather than property rights and can be grouped into parcels at community level and at personal or family level. An example of the former was found in the *Bakelse gemeint*, where the entitled communities each had their own part of common land including peat deposits (Van Zalinge-Spooren 2018: 136–7). There were many examples of parcels on personal or family level in the wider regions studied as well, such as the heathlands in the Principality of Stavelot-Malmedy (Hansotte 1987: 362, 365). The early modern Peel bogs, and probably also the pre-1800 *commune de Xhoffraix*, had parcels for sustenance peat cutting on family level (Van Zalinge-Spooren 2018: 120).<sup>7</sup> These examples illustrate that notions of private user rights influenced common-pool resource management.

Another similarity was that the communities of both cases were largely autonomous in the management of their commons (Hansotte 1987: 375; Van Zalinge-Spooren 2018: 48). For example, the territorial lords could not freely sell common land or commercialise its use and had to respect the commoners' rights (Hansotte 1987: 362; Vera 2011: 185). Moreover, in the *Bakelse gemeint* the entitled communities jointly appointed representatives (named *peelmeesters*) who regulated and supervised the use of the common. Each community could appropriate a certain amount of goods, including peat. The separate communities decided themselves how these products were distributed amongst their members. But there was more: the 1326 charter gave the communities using the *Bakelse gemeint* the right to, among others, exclude foreigners and sell common land (Van Zalinge-Spooren 2018: 28–9, 248).

### 4.2. SIGNIFICANCE OF PEAT COMMERCIALISATION

Such rights to sell common land were usual for communities in the Peel region. But as it meant killing the goose that laid the golden eggs, communities were very reluctant to do so and only did it out of dire financial need

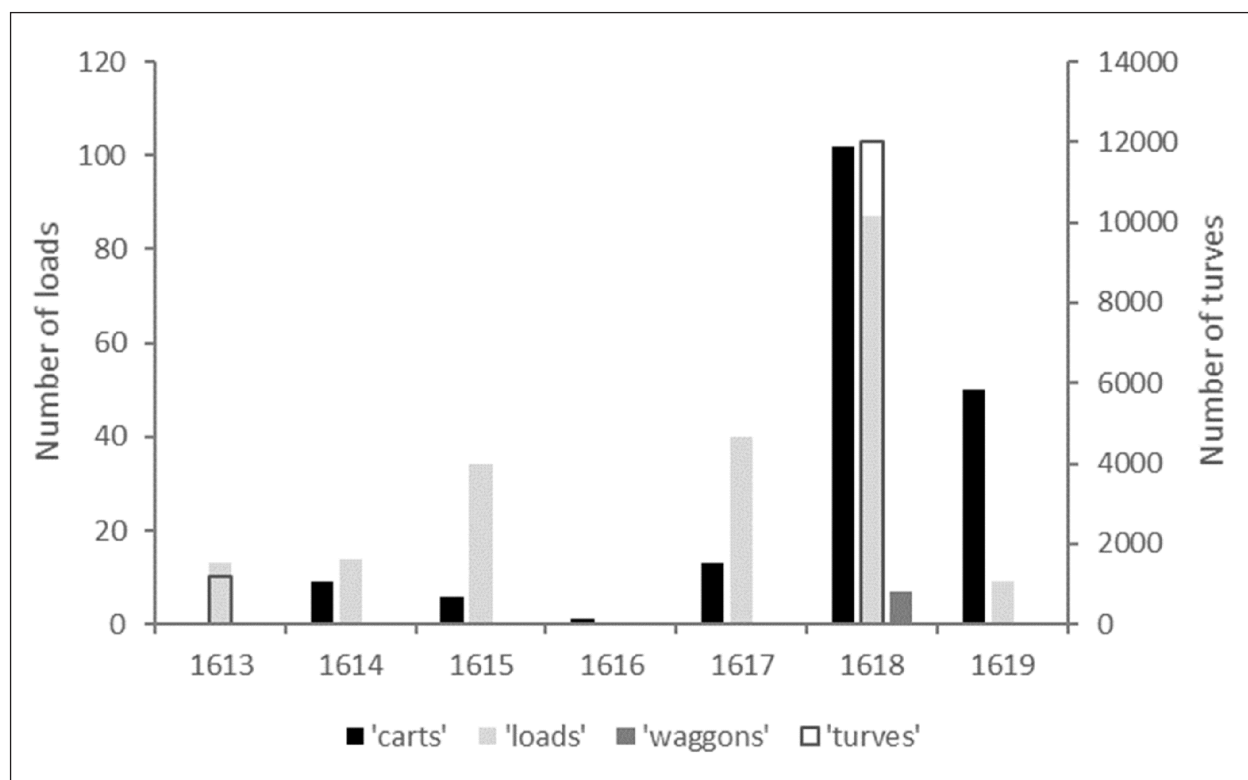
(Van Zalinge-Spooren 2018: 254–255). Another way to generate income was preferred, namely to sell marketable goods from their common, such as peat. Yet, peat commercialisation was formally prohibited by consecutive versions of the *Bakelse gemeint* bylaws (Gemeentebestuur Deurne 1499; Gemeentebestuur Helmond 1571–1627, 1649; Appendix 2). Other commons in the Peel region had similar restrictive regulations to limit peat commerce (Van Zalinge-Spooren 2018: 113–4). Nonetheless, peat commercialisation by villagers of Bakel occurred regularly from around 1600. In 1608, the community of Bakel was taken to the Council of Brabant (the duchy’s highest court) by the other entitled communities over commercialisation of turves from the *Bakelse gemeint*. In its 1611 interim and 1620 final judgments, the Council allowed Bakel to sell peat to outsiders, but ordered them to provide the other entitled communities with overviews of peat sold (Boeije and Philipsen 2002). **Figure 2** shows the volumes of commercialised peat as recorded in the accounts for the period 1613–1619.

The quantities of sold peat were expressed in different units. We assume that ‘carts’, ‘loads’ and ‘waggons’ – the terms encountered in the sources – indicated similar dimensions. Thus, the total number of recorded peat loads sold annually ranged from one in 1616 to just over 200

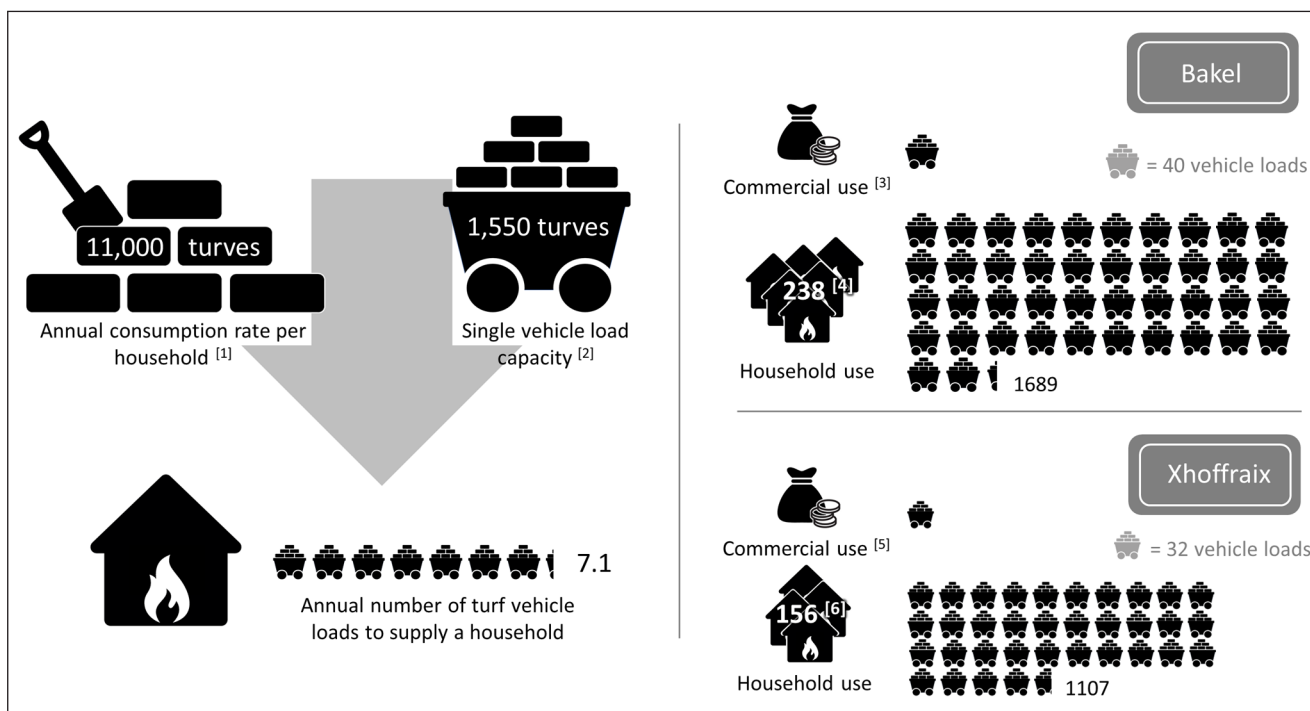
loads in 1618 (**Figure 2**). According to these records, just under 400 loads of peat were sold from Bakel over these seven years, with a median annual amount of 40 loads.

The significance of this peat commercialisation can be assessed in different ways. One is to estimate the volume ratio of commercialised to privately used peat within the same entitled user community. Data on historical domestic peat consumption in the study areas and the Low Countries in general are very scarce (cf. Gerding 1995: 312–3). Two sources (Fontaine 2006; Rotherham 2009), partly outside the spatiotemporal scope of the case studies, held data on household peat consumption and vehicle load capacity (**Figure 3**).<sup>8</sup> Based on these, a median annual peat consumption of 7.1 vehicle loads per household could be established.<sup>9</sup> Multiplying the number of houses in the study areas in the time periods under study by 7.1, the total number of vehicle loads of peat privately consumed annually by all households of the entitled community can be obtained. In the case of Bakel, a median volume ratio of commercialised to privately used peat of 1:42 was thus found (**Figure 3**).

A second determinant of the significance of peat commercialisation from commons is its geographical outreach. In the wider regions of the case studies, distances between neighbouring villages and towns were typically



**Figure 2** Quantities of peat sold from Bakel as recorded by subsequent village clerks (1613–1619). The right-hand y-axis displays quantities expressed in turves, while the quantities expressed in the remaining units are depicted on the left-hand y-axis. This explains why bars representing different units overlap for 1613 and 1618. Source: Gemeentebestuur Helmond (1613–1619).



**Figure 3** Calculation steps to estimate the volume ratios of commercialised to privately used peat from the studied bog commons. All numbers are medians, except the number of houses per community. Sources: [1] Fontaine (2006: 12); Rotherham (2009: 22); [2] Fontaine (2006: 24); Rotherham (2009: 32); [3] this study; [4] Dussart (1947: 72–73); [5] this study; [6] Ferraris and Bracke (2009) (number of houses only of the villages entitled to use the *commune de Xhoffraix*).

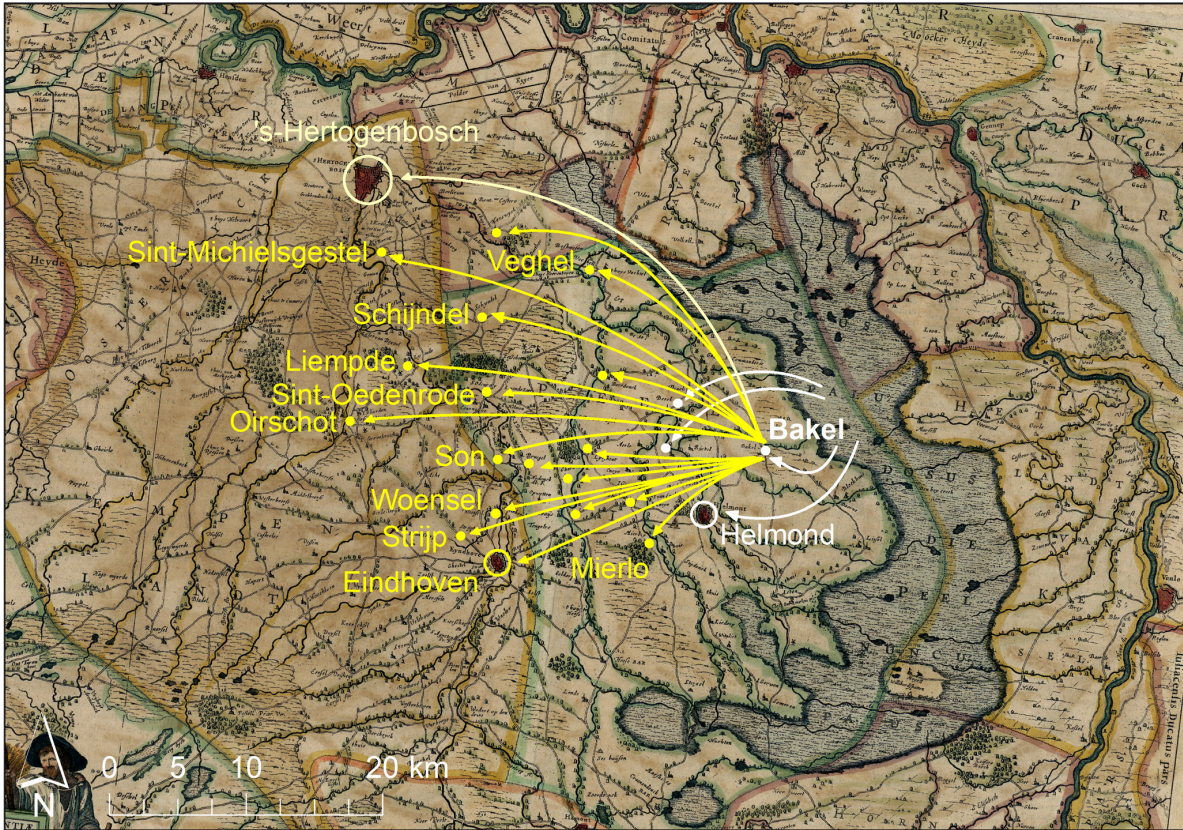
5–7 km. Most places had their own common serving the local community's needs. Many of these commons also provided peat fuel, but the largest quantities of peat were found in the commons situated within the Peel and Hautes-Fagnes bog landscapes (Schumacker and Strel 1994; Van Zalinge-Spooren 2018). Between 1613 and 1619, turves sold from Bakel were carried overland to towns and villages up to 35 km away. Sources from 1649 and 1705 also refer to turf shipping to (breweries in) the city of 's-Hertogenbosch – some 40 km from Bakel – over the small river Aa (Figure 4). These turves were carried overland to a place 10 km from Bakel and then transferred to boats (Resoluties Raad van State 1649; Schepenbank Bakel en Milheeze 1705). These distances and transport means are indicative of a multi-party commercialised trading scheme for peat. This further underlines the active market that existed at the time, making the peat a relevant resource far beyond local economic significance.

A third determinant of the significance of peat commerce from commons is its permanence or recurrence over time. Peat commercialisation from Bakel was certainly not limited to the period 1613–1619 covered by Figure 2. Sources from the period 1649–1841 also refer to regional overland hawking and trading of turves by inhabitants of Bakel as a substantial activity (Resoluties Raad van State 1649; Schepenbank Bakel en Milheeze 1705; Resoluties

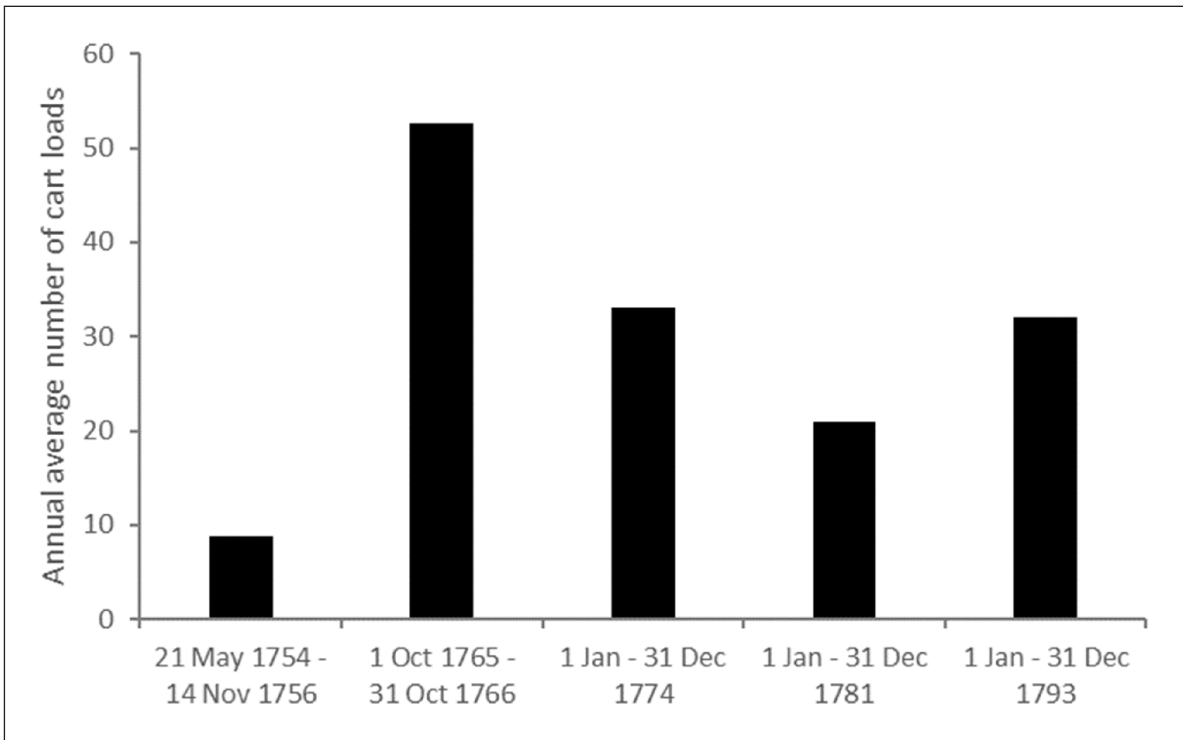
Raad van State 1727; De la Court 1841). The *commune de Xhoffraix* showed 40 years of uninterrupted peat commercialisation. Turves were sold to the abbatial paper mill in Malmedy and brought there using carts. Figure 5 gives an overview of peat bought by the mill. The annual number of cart loads of turves ranged from 9 to 53 with a median of 32.<sup>10</sup> Although the source did not explicitly state the peat provenance, it is highly likely that it was extracted in the nearby *commune de Xhoffraix*.<sup>11</sup> Based on the same key figures and assumptions as for the *Bakelse gemeint*, the median volume ratio of commercialised to privately used peat is 1:35 for the *commune de Xhoffraix* (Figure 3). This ratio may have been greater considering that turves were also (allowed to be) sold to inhabitants of Malmedy (Lacaille 1772–1802; Polain 1864: 354).

Although our study focuses on two local cases, a fourth determinant of the significance of peat commercialisation from commons is its regional incidence. Turf commerce from bog commons also occurred in other localities in the Peel and Hautes-Fagnes. A seventeenth-century description of the Bailiwick of 's-Hertogenbosch states that the inhabitants of (non-specified) villages bordering the Peel bogs had peat in abundance for private use and sold turves to other communities where fuel was scarce. The peat was transported by carts and it was claimed that the traders made good profits (Van Oudenhoven 1670: 15). Other





**Figure 4** Destinations of peat taken from the *Bakelse gemeint*, plotted on a map by Hondius (1639) which clearly depicts the Peel bog region (in blue). White arrows indicate peat flows to communities entitled to use the common. Yellow arrows indicate the 1613–1619 regional exports, while the light-yellow arrow indicates exports to the city of ‘s-Hertogenbosch as attested in 1649 and 1705.



**Figure 5** Overview of peat bought by the Malmedy abbatial paper factory during five sample periods (Abbaye de Stavelot-Malmedy 1754–1793).

sources indicate that besides Bakel, the nearby Bailiwick villages of Asten, Deurne, and Someren were also involved in peat commerce (Leen- en Tolkamer 1726; Resoluties Raad van State 1727). These communities directly bordered extensive bog commons and were entitled to their use. On the eastern side of the Peel, the administration of the Austrian Netherlands conducted a survey of industrial and commercial activities in its territories in 1764. For the district of Meijel, the inventory mentions that the only produce consisted of rye, buckwheat and peat. The report stated that the grain yields of that village were insufficient to feed its population. The inhabitants sold peat in the nearby cities of Roermond and Venlo and in bordering (foreign) territories. The profits were used to buy additional grain for their own consumption. The inventory was concluded by stating that peat represented the whole commerce of the inhabitants of Meijel, and that they did not pay any import duties to foreign territories for their turves (Moureaux 1974: 1221).

Most references for the Hautes-Fagnes relate to late modern peat commercialisation. Thomassin (1879: 430) and De Ladoucette (2009: 92) referred to peat use by the region's early industries. According to Froment (1968: 32), two peat bogs were 'intensively' exploited for industrial needs of the nearby towns of Malmedy and Monschau.<sup>12</sup> It is difficult to quantify peat commercialisation based on these sources. In the later nineteenth century, people from the wider region annually came to the Hautes-Fagnes with hundreds of carts to buy turves. Around 1926, villagers of Weywertz cut peat primarily for private household use (Krebsbach 1926: 136–7). Villagers of Solwaster sold peat to farriers in the neighbouring town of Spa, who used this fuel to mount iron tyres to cartwheels (Wisimus 1936: 72). It can be deduced from Krebsbach (1926) that villagers in the region used to sell at least four carts of the amount of peat they cut annually.

#### 4.3. PEAT COMMERCIALISATION: ACTOR MOTIVES AND ATTITUDES

In the 1608–1620 lawsuit the people of Bakel claimed that peat was sold out of dire financial need and that selling turves at a high price was the only way to pay their taxes and war-related debts. Villagers sold peat to outsiders because they paid more for the turves than people from the entitled communities in the *Bakelse gemeint*. Bakel also pointed out that each entitled community had its own delimited part of the common, which meant that the village did not divest the others by commercialising its peat (Boeije and Philippsen 2002). The stance of the other entitled communities, opposed to Bakel's peat trade, was supported by the bylaws which prohibited selling turves to outsiders (Gemeentebestuur Helmond 1571–1627). Bakel did not deny these bylaw rules, but contested their validity

as long as the Council of Brabant had not declared these regulations as binding. This was a clever move, since the Council had already allowed Bakel to sell peat to outsiders in an interim judgment (1611), if they provided the other entitled communities with accounts of the sold turves as illustrated in *Figure 2*. The final judgment (1620) confirmed this, thus actually overruling the bylaws (Boeije and Philippsen 2002). Bakel used the motive of dire need again in 1649. During that year's dry summer, they claimed to have cut additional peat, expecting to sell this to 's-Hertogenbosch breweries (Resoluties Raad van State 1649). Interestingly, the 1649 bylaw showed a remarkable reduction of the fine for selling peat to non-entitled outsiders. This indicates that the entitled communities had adopted a more tolerant attitude towards peat commercialisation than before (Gemeentebestuur Helmond 1649; Appendix 2). Later sources present peat commercialisation from Bakel primarily as a long-standing tradition (Schepenbank Bakel en Milheeze 1705; Leen- en Tolkamer 1726; Resoluties Raad van State 1727).

In the Hautes-Fagnes case, a 1583 princely ordinance on the *commune de Xhoffraix* allowed the entitled villagers to sell peat to Malmedy, but not to foreigners or other outsiders. As part of a judgment following a dispute between the villagers entitled to use the common on one side and the townsmen of Malmedy on the other, the document makes explicit that the state strived for social harmony among both parties:

'Que [Son Altesse] pour entretenir paix et bonne voisinance entre ses subiectz par son haultain officier chastierat arbitrairement ceulx quy contre la teneur de ceste sentence et ordonnance [...].' ('That [His Highness], in order to maintain peace and good neighbourliness between his subjects, will – through his high officer – as an arbitrator persecute those that [act] against the content of this judgment and ordinance [...].'; Abbaye de Stavelot-Malmedy 1583b)

Two centuries later, a princely ordinance from 1780 concerning the same common again allowed the entitled villagers to sell peat to Malmedy, while forbidding peat extraction by and peat sales to non-entitled outsiders (Polain 1864: 354). We found no direct evidence regarding these villagers' thoughts about peat sales to the abbatial paper mill. The factory's regular peat procurement spanned four decades (*Figure 5*). If there was any opposition against peat commercialisation among entitled bog users, the preceding proves it was not decisively effective nor enforced in any way. The long persistence of this peat commercialisation makes it unlikely that dire need was the sole motive.

### 4.4. LONG-TERM IMPACTS OF PEAT COMMERCIALISATION ON THE COMMONS

Figure 6 summarises and extends the preceding account through a timeline of key events and developments in the long-term history of the two case studies until present. Although the main temporal focus has been on the early modern period, this section specifically analyses what happened in the late modern period (i.e. after 1800) to

assess the long-term impact of turf commercialisation on both the peat reserves and the common-pool institutions of our case studies.

The long-term effect of peat commercialisation on the non-renewable resource itself obviously was adverse in both studied cases but limited compared to the impact of peat extraction for private household needs (Figure 3). In the French period, c. 1794–1815, the ownership of the

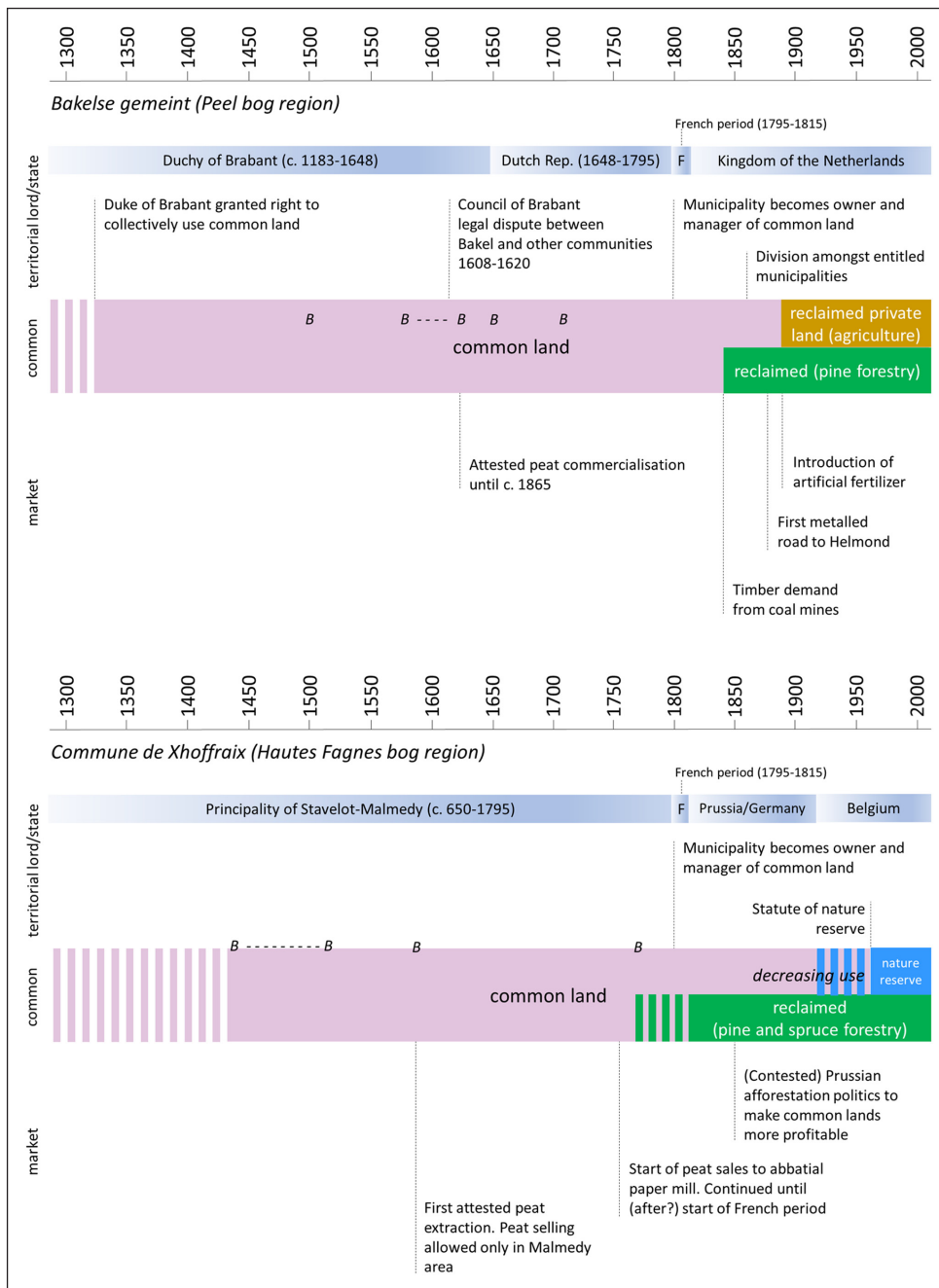


Figure 6 Timeline of key events and developments in the long-term history of the two case studies. B indicates newly issued bylaws or ordinances that have been handed down. In the case of the *Bakelse gemeint*, bylaws were made by the common-pool institution. In the case of the *commune de Xhoffraix*, the issuing of ordinances was more top-down from the lord/state towards the commoners. This explains the different positions of the Bs in the graphs. Main sources for post-1800 period: Collard and Bronowski 1993; Thissen 1993.

common lands was assigned to the newly established local governments (municipalities). In cases where several communities had jointly used common lands, as in the *Bakelse gemeint*, their respective municipalities became joint owners. This situation complicated decision-making concerning the *Bakelse gemeint* and – apart from municipal pine afforestation starting around 1840 – not much changed until the second half of the nineteenth century. The common lands continued to be seen as indispensable for local agriculture, and the technical means, knowledge and capital to reclaim the harsh bogs and heathlands was insufficient. Peat was cut and sold on a significant scale from the *Bakelse gemeint* until the 1860s (Thissen 1993: 32–3, 40, 47). Ultimately, the remaining common-pool resources of peat in the *Bakelse gemeint* were destroyed by large-scale reclamations for forestry and agriculture in the decades after 1880 (Thissen 1993: 47). These reclamations were driven by several factors. First, the advent of artificial fertilisers further decreased the importance of the common lands for local agriculture, while technically improving the potential for reclamation (Thissen 1993: 87). Second, after decades of preparation, the four municipalities jointly owning the *Bakelse gemeint* had finally divided their common property in 1864 and mostly sold the land to private owners shortly afterwards (Thissen 1993: 50–1). A similar pattern was observed in the Hautes-Fagnes. Here, reclamations mainly served spruce afforestation, causing tensions between municipalities (representing local commoners) and forest administration officials throughout the nineteenth century (Dries 2017: 156–157). In contrast to the bogs of the *Bakelse gemeint*, the cutover bogs of the *commune de Xhoffraix* have largely survived into the present as non-forested nature reserves, with patches of living bog vegetation showing peatland regeneration potential (Collard and Bronowski 1993).<sup>13</sup>

Looking at the effects of peat commercialisation on the long-term survival of the studied common-pool institutions, it can be sustained that the peat trade had no decisive negative impact. Nevertheless, peat selling from the *Bakelse gemeint* was initially heavily contested among the entitled user communities, and the eighteenth century saw tensions between Bakel and the other communities about varying issues (Van Zalinge-Spooren 2018: 82). But the common-pool institution survived, and common-pool resource usage including peat commercialisation continued for decades after the civic municipality had succeeded this institution around 1800 (Thissen 1993: 32, 40). A similar evolution was observed in the Hautes-Fagnes, where peat cutting on municipality-owned bog commons continued into the twentieth century (Fontaine 2006: 6–8).

This primarily concerned domestic extraction, but included peat selling to outsiders (Krebsbach 1926: 136–7; Wisimus 1936: 72).

## 5. DISCUSSION

This study has highlighted a largely overlooked category of historical peat exploitation, namely market-oriented extraction from common lands by commoners. Active peat commercialisation from commons was a recurrent or permanent phenomenon in the early modern cases studied and went together with regular domestic peat cutting on the commons.

The property and use rights patterns found in the study fit well with the general pattern for continental Northwest Europe (Grüne et al. 2015: 276–277). The two cases analysed can therefore be considered representative for a larger geographical region, provided that regional patterns of fuel supplies and demands from local inhabitants and industries are roughly similar.

Early modern peat commercialisation occurred in different forms. In the case of the Peel bogs, turves were sold to places in the wider region where access to peat was limited and people were willing to pay relatively well for it. Even though there was some (intended) supply to industries, such as breweries in the city of ‘s-Hertogenbosch, turves were generally sold to individuals. In the early modern Hautes-Fagnes, peat was supplied to local paper and cloth manufactories. The studied ordinances indicate that individuals also bought turves there, but their share in total commercialisation is hard to establish. The significance of peat commerce from commons was in the frequency of its regional occurrence, and in its permanence, recurrence, and/or regional outreach, rather than in its volume compared to total peat extraction. However, especially in the Bakel case there possibly was an underestimation of commercialisation given the background and state of the peat sales records. Our findings underline that bog commons were not economically marginal but at times heavily contested and of supralocal importance.

Villagers using the *commune de Xhoffraix* were formally allowed by their territorial lord to sell peat within the Malmedy area, but not to outsiders (Abbaye de Stavelot-Malmedy 1583b; Polain 1864: 354–5). For the *Bakelse gemeint* it may be asked whether peat commercialisation was in fact clandestine. Although the local bylaws forbade it, the way village authorities repeatedly referred to their (tradition of) peat commerce before higher authorities suggests it was an open rather than clandestine business. According to Bakel inhabitants, their motive to sell peat was

the village's financial hardship due to war or other crises. This motive is mirrored by Van Zanden's (1999: 133–4) findings for commons elsewhere in the early modern Low Countries, and by Venter and Witkowski (2013) and Weyer et al. (2018) for present-day African cases. But looking at the longer term, this did not seem to be the only explanation. In both our cases, peat commercialisation stretched out over turbulent as well as more peaceful and prosperous times. Thus, it seems plausible that commercial turf-selling was also just to earn some extra money. If we broaden Thoen's (2001) notion of a 'commercial survival economy',<sup>14</sup> it may aptly frame peat commercialisation from commons. Bakel's eighteenth-century's requests to central authorities to facilitate their peat commerce even seem to invoke the tradition of peat commercialisation in a self-legitimising way. Most likely our cases of commercialisation were driven by the emergence of a commercial economy and rural proletariat (Hélin and Quenon 1994: 62, 66; Bieleman 2008: 139–140) looking for an income. In a similar way, several villages in the early modern Hautes-Fagnes specialised in wheeled transport services (Yante 1986; De Ladoucette 2009: 96).

The 1583 and 1780 princely ordinances on the *commune de Xhoffraix* suggest the state aimed to mediate disputes (in line with Hansotte 1987: 357) and protect the commoners' interest against non-entitled outsiders, while allowing a limited degree of commercialisation. Similarly, the Council of Brabant allowed Bakel inhabitants to sell peat under certain conditions, thereby overruling the local bylaws. Hence, state institutions in both cases reflected a pragmatic attitude, probably with the intention to foster social harmony and local prosperity in times of resource contestation and economic hardship.

From a theoretical perspective, two aspects of peat commercialisation from bog commons merit particular attention. The first deals with the distinction between renewable and non-renewable resources. CPR theory develops its assumptions primarily from renewable resources such as pastureland (see e.g. Ostrom 1990: 26). The bylaws and ordinances studied in general did not explicitly distinguish between renewable and non-renewable resources.<sup>15</sup> This corresponds with similar (implicit) findings for other historical commons of the Low Countries (e.g. Van Zanden 1999; De Moor 2015; De Keyzer 2018). Other studies have shown that restrictive bylaws were also issued with respect to commercialisation of renewable common-pool resources (e.g. De Keyzer 2018: 71; Van Zalinge-Spooren 2018: 130).<sup>16</sup> In general, what counted for early modern commoners was the practical (commercial) use value of common-pool resources. Both renewable and non-renewable resources could

potentially have commercial value, and both types of resources were susceptible to overuse with deleterious and lasting effects. Moreover, whether commoners perceived peat as a renewable or a non-renewable resource may also have depended on the historical and geographical context, in particular the remaining volume of peat present in the common.<sup>17</sup> The second aspect relates to the question whether peat was the only resource taken from bog commons. If it was, then the common may have been more prone to deleterious free riding (through commercialisation) than if it offered other important (renewable) resources as well. In neither case studied was peat fuel the only resource taken from the commons. The bogs also supplied renewable goods of vital importance to the agrarian sustenance economy, such as extensive pastureland and litter for use in the stables. Importantly, the studied bogs were part of larger common lands that included heathland and patches of forest as well. These ecosystems provided timber and firewood as well as fodder and sods which after mixing with manure were used to improve arable land. These various renewable and non-renewable resources were mentioned in different bylaw rules. Mostly, the bylaws did not specify whether the goods came from the bogs or other parts of the common. No evidence could be identified that commoners saw imminent peat depletion as the inevitable end of their common. Instead, the common continued to be valuable as extensive pastureland, and local farmers considered it as vital land to guarantee sufficient manure until well into the nineteenth century (e.g. Thissen 1993: 33; De Keyzer 2018: 74). Hence, the fact that the studied commons offered various sustenance resources next to peat fuel may have motivated the commoners to preserve their common despite tensions over peat commercialisation.

These findings contribute to the debate on the structure and functioning of historical and present-day commons in two main ways. Firstly, while CPR theory underlines that commons operated autonomously (Ostrom 1990; De Moor 2015), the findings reveal 'institutional hybridity'. The commons were – either durably or at times of internal conflict – clearly connected to and influenced by markets, governments, and notions of private user rights. The latter refers to the parcellation practices.<sup>18</sup> These mechanisms allowed a controllable level of peat commercialisation alongside non-commercial extraction, by limiting the risk of free riding and subsequent resource overexploitation. Although the commons were mostly self-managed, the state could exert significant influence. Examples were the princely ordinances on common land use and the decisive direction of court rulings on the use of commons. Hence, the findings show that the hybrid modes of governance

that have emerged in the last decades (Lemos and Agrawal 2006: 297), are not new phenomena, but have clear historical precursors. The studied cases showed 'benevolent state coercion' through court rulings and ordinances. These directives aimed at balancing the economic interests of a community (commercialisation in a survival economy) and careful exploitation of a depletable common-pool resource. Today, state coercion is still one of the instruments for co-management of common-pool resources (i.e., joint management of the commons by the community and the state; Howlett 2009). These findings are in line with Carlsson and Berkes's (2005) view that co-management of commons is a continuous problem-solving process rather than a fixed and predetermined situation, and indicate this has been so since at least the early modern period.

A second important contribution of the findings to the commons debate is that prolonged commercialisation of peat from bog commons did not prevent the common-pool institutions from functioning adequately in the longer term. Even in the case of the *Bakelse gemeint*, with a history of conflict between Bakel and the other entitled communities (Boeije and Philipsen 2001, 2002; Van Zalinge-Spooren 2018: 81-82), the communities did not abandon collective resource management until well after 1800. Managing resources collectively rather than privatising them may have given communities a stronger position in relation to both the state and neighbouring communities, while limiting the risk of individual appropriators being played off against one another. Thus, in line with findings by De Keyzer (2018) and Beltrán Tapia (2015), long-term use of common-pool resources could go together with a moderate degree of commercialisation. This finding is of particular relevance to persistent assumptions in policy and society that commons can best be managed through wholesale privatisation and commercialisation.<sup>19</sup> This study shows how people through time could improve their living conditions by moderate commercialisation of common-pool resources, in addition to using these for subsistence (e.g. Venter and Witkowski 2013; Weyer et al. 2018).

The findings do entail a degree of indirect inference, notably concerning motives for peat commercialisation and actor attitudes towards this phenomenon. This is an important shortcoming. However, even if all potential case studies across the Low Countries could have been analysed exhaustively, the risk of fragmented, imbalanced or biased historical evidence would remain unaffected. Notwithstanding, this study offers interesting perspectives for future research. Our work has identified a threefold division into privatised bogs subject to large-scale commercial peat exploitation, bog commons with partial

commercial exploitation, and bog commons where peat was solely exploited for sustenance and domestic use. One interesting avenue for future research could be to investigate whether this division spatially coincided with a gradient from bog regions close (or infrastructurally well connected) to the Low Countries' main urban centres, via more isolated bog regions but with high local fuel demands (due to relatively high rural population densities, the presence of industrial towns and/or locally scarce fuel resources), to predominantly rural regions further away from cities and with relatively good access to local peat supplies for all inhabitants.

## 6. CONCLUSIONS

This study contributes to a better understanding of the nature and significance of early modern market-common connections, providing insights into conditions and drivers for marketing of common-pool resources. Two cases of peat commercialisation from raised bog commons in the historical Low Countries were analysed, whereby thriving marketisation was quantified and shown to exist alongside the use of these bogs as commons. As such, the study adds a new and intermediate category of peat exploitation to the traditional binary subdivision in domestic sustenance peat extraction from commons versus large-scale commercial exploitation of privatised bogs.

The property and use rights situation of the studied bogs (research question 1) was similar in both cases and fits with the general pattern for continental Northwest Europe. Formal property was claimed by the respective territorial lords, who granted permission to neighbouring communities to manage the bog resources as common land.

Bog commons were not economically marginal but of supralocal importance. The significance of peat commerce from commons (research question 2) was in the frequency of its regional occurrence, and – on case study level – in its permanence, recurrence, and/or regional outreach, rather than in its volume compared to total peat extraction. However, we possibly underestimated the total volume of annually commercialised peat.

Concerning the motives for and attitudes towards peat commercialisation from commons (research question 3), the main question was whether the trading of turves was driven by dire necessity or mere opportunity. Taxes and high debts placed communities in dire financial straits, which was one of the motives for peat commercialisation. However, peat commercialisation was of recurrent or permanent nature, stretching out over turbulent as well as more peaceful and prosperous times. Hence, simply

wanting to earn some money in a ‘commercial survival economy’ seemed a plausible additional motive for peat commercialisation. State institutions could markedly influence commons management in times of (internal) conflict. In doing so, they showed a pragmatic attitude towards peat commercialisation, probably to foster social harmony and local prosperity in times of resource contestation and economic hardship.

Regarding the long-term impact of commercialisation on the studied peat resources and common-pool institutions (research question 4), long-term sustenance use of common-pool resources could go together with a moderate degree of commercialisation. Rather than being completely autonomous worlds, commons were – permanently or at times of internal conflict – clearly connected to and influenced by markets, notions of private user rights, and state institutions.

A shortcoming of our study is that it entails a degree of indirect inference, especially concerning motives for peat commercialisation and actor attitudes towards this phenomenon. However, a certain risk of fragmented, imbalanced or biased evidence is inevitable in an historical study such as this. One potential avenue for future research could be to investigate to what degree and how commercialisation of peat taken from commons geographically coincided with spatial distributions of population, peat resource abundance, and early industrial fuel demands.

## NOTES

- 1 For English-language overviews on raised bogs in Northwest Europe and the Low Countries in particular, their past usages and transformations, present states and future challenges, we refer to Frankard et al. (1998); Van Beek et al. (2015); and Joosten et al. (2017).
- 2 The Low Countries roughly coincided with the present-day Netherlands, Belgium, and Luxembourg in Northwest Europe.
- 3 Although many bogs covered vast areas they functioned as commons rather than open access resources at least since late medieval times (Gerding 1995; Leenders 2013; Van Zalinge-Spooren 2018). This was because usage of large bogs was invariably shared by several surrounding communities. Even if there was enough peat for everyone initially, bogs also supplied other resources. Where possible, they were used as pastureland (e.g. Schumacker and Streeel 1994: 12; Gerding 1995: 16). As the latter usage form was per definition of a very extensive nature, this easily led to conflict over boundaries of individual communities’ shares of the bog. Such conflicts were numerous in late medieval and early modern times and have undoubtedly promoted early regulation of bog usage (cf. Van Zalinge-Spooren 2018).
- 4 The terms ‘*gemeint*’ and ‘*commune*’ both designate common lands.
- 5 A 1780 ordinance (Polain 1864: 354–5) suggests that peat was mainly cut by the villagers mentioned, while Lacaille (1772–1802) indicates regular peat sales to Malmedy citizens from surrounding villages around 1788.
- 6 Estimated by multiplying the number of houses on the Ferraris map by 5 (average number of residents per house as assumed by Hansotte 1973: 27). The number of houses per village around

- 1750 presented by Hansotte (1973) are significantly lower and considered less reliable than those based on the Ferraris map.
- 7 Cadastral maps of c. 1830 show that the bogs in the *commune de Xhoffraix* were divided into small parcels (Cadastre prussien 1828–1830).
- 8 Both sources refer to the period before houses were well insulated. Rotherham (2009) provides data for East Anglia. Since this region is climatically comparable to the Peel region, we assume similar annual peat consumption rates. For the colder Hautes-Fagnes region we rely on Fontaine (2006).
- 9 This fits in with the range of 1–16 vehicle loads of turves that local households took away from bogs in the southern Belgian Ardennes in 1819 (Watelet 1982: 212).
- 10 We attribute the low peat supply in the 1754–56 period to the difficult start-up of the paper mill after it was founded in 1750 (Kaefer 1971: 16).
- 11 Almost everyone involved in transporting the peat to the factory came from the villages entitled to use these bog commons (Figure 1c). Froment (1968: 32) states that the bog Fraineu, which is in the *commune de Xhoffraix*, had been ‘intensively exploited’ to provide fuel for the Malmedy paper mill (he refers to the successor of the abbatial mill, early nineteenth century). We assume that in our period of study, peat for the abbatial paper mill could have been extracted in any bog of the *commune de Xhoffraix* (personal observations of the first and third author during a field visit of the Fraineu bog remnants and personal communication with Philippe Frankard MSc and Pascal Ghiette MSc of the Service Public de Wallonie, 3 December 2019).
- 12 Besides the aforementioned Fraineu bog, Froment (1968: 32) refers to the Brackvenn bog that supposedly supplied peat to Monschau factories. The latter is confirmed by Barkhausen (1925: 14) who specifically refers to the Monschau cloth industry.
- 13 Norway spruce (*Picea abies*) does not grow well on thick bog peat deposits and the main bog remnants were eventually largely spared from afforestation.
- 14 Thoen (2001) specifically coined this term to describe early modern agriculture in the urbanised county of Flanders.
- 15 Only the most recent one, the 1780 ordinance for the *commune de Xhoffraix*, points at the danger of the peat deposits becoming fully depleted due to overuse.
- 16 Especially rules to avoid overgrazing by sheep flocks, as these flocks could contribute to soil deterioration and drift-sand development.
- 17 Cf. the consecutive ordinances for the *commune de Xhoffraix* (Appendix 2).
- 18 In an inverse way, the private peat cutting parcels in our commons resemble the medieval and early modern open fields in Europe, where after harvest communal grazing took place on parcelled arable land held in private property – the ‘semicommons’ described by Smith (2000).
- 19 A recent example is Iceland’s fisheries. See Arnason (2005) and Einarsson (2011) for different views on the success of Icelandic fisheries privatisation.

## ADDITIONAL FILES

The additional files for this article can be found as follows:

- **Appendix 1.** Methodology. DOI: <https://doi.org/10.5334/ijc.1054.s1>
- **Appendix 2.** Evolution of bylaw rules and fines relating to peat extraction and commercialisation. DOI: <https://doi.org/10.5334/ijc.1054.s2>


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## COMPETING INTERESTS

The authors have no competing interests to declare.


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