

## **‘Any English settler would have been driven insane’. Dutch investors and the draining of Hatfield Chase, 1626-1660**

Piet van Cruyningen, Huygens Institute for the History of the Netherlands

In 1626, Charles I reached an agreement with Dutch engineer Cornelius Vermuyden to drain the level of Hatfield Chase, a wetland area in Lincolnshire and southern Yorkshire.<sup>1</sup> The drainage of this area of some 70,000 acres by Vermuyden and a group of mostly Dutch investors became a *cause célèbre* in the history of English wetland reclamation because of the many difficulties they encountered. A nineteenth-century English author commented that any English settler would be driven insane by these problems, but the more cold-blooded Dutch seemed to take them in their stride.<sup>2</sup> Unfortunately, this paper will show that the Dutch were not that cold-blooded and that many of the difficulties were of their own making.

Vermuyden and his ‘adventurers’ encountered two kinds of problems. The first were caused by the expropriation of parts of the commons of the adjacent villages. To remunerate Vermuyden and the investors, they were to receive one third of the drained land, and the king would also receive a third, so the villagers lost two thirds of their commons. Arbitration reduced the loss to about one half, but that still was a blow to the regional economy. The commoners lost rights of fishing and fowling, reed and turf cutting, and, most importantly, large areas of pasture. Grazing was essential for agriculture in the area, which was mostly pastoral.<sup>3</sup> The loss of commons led to riots, destruction of drains, fields and farmsteads, and litigation, which continued for almost a century, until 1719. As a result, the costs of the enterprise rose considerably, but Vermuyden and the investors themselves added to the problems by quarreling over the repartitioning of the costs and delaying necessary repairs.

In the Dutch Republic, investors in drainage seldom encountered such trouble. The Dutch had developed institutions to deal efficiently with the conflicts drainage schemes might cause. Those who wished to reclaim land – usually a ‘company’ of investors who held shares in the enterprise – had to apply for an *octrooi* (patent) with the States of the province or with the States-General. When the patent was granted, it contained conditions to deal with externalities. The projectors had to compensate those whose land was expropriated or whose interests were harmed by the project – e.g. water boards that used a lake that was to be drained for storage of excess water – in money or by constructing new canals or sluices. In the patent, the drainage company was also incorporated. The participants were granted the right to elect a board that could raise taxes to finance the works and to pay for maintenance afterwards.<sup>4</sup> In this way, conflicts were usually prevented and the financial responsibility for maintenance was clearly established.

If the Dutch had exported these institutions to England, they might have prevented a lot of difficulties. The failure to do so could have been caused by the fact that institutions are embedded in specific social, cultural and political contexts and cannot be easily transplanted to

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<sup>1</sup> J. Korthals Altes, *Sir Cornelius Vermuyden. The lifework of a great Anglo-Dutchman in land-reclamation and drainage* (London, 1925), appendix II.

<sup>2</sup> Quoted in H.S. van Lennep, *Van Valkenburg. Een Haarlems regentengeslacht* (s.l., 2000), p. 7.

<sup>3</sup> J. Thirsk, ‘The Isle of Axholme before Vermuyden’, *Agricultural History Review* 1 (1953), pp. 16-28.

<sup>4</sup> P. van Cruyningen, ‘State, property rights and sustainability of drained areas along the North Sea coast in the sixteenth – eighteenth centuries’ in B. van Bavel and E. Thoen, eds., *Rural societies and environments at risk. Ecology, property rights and social organization in fragile areas (Middle Ages – twentieth century)* (Turnhout, 2013) pp. 186-187, 196.

different contexts. Another cause might be that Vermuyden and his partners deliberately decided not to apply Dutch institutions. People are not just prisoners of structures and institutions, they can make a difference, for good or for bad.<sup>5</sup> In this case, the Dutch method of reaching compromises and protecting the interests of all parties prevented most conflicts and litigation, but it was also time-consuming and costly. Vermuyden and his partners may have reasoned it would be more expedient to rely on royal support to crush opposition. The Crown was fully prepared to provide that support.<sup>6</sup>

The conflicts between Vermuyden and the commoners have been thoroughly studied by Lindley.<sup>7</sup> This paper aims at explaining why efficient Dutch institutions were not introduced and what financial consequences this had for the project. It will demonstrate that until 1642, the conflicts between Vermuyden and the participants and the failure to set up an efficient system for financing maintenance caused more damage to the project than the problems with the commoners. However, by comparing with Dutch drainage projects, it will also show that the draining of Hatfield Chase was not such a financial catastrophe as is often claimed in the literature.<sup>8</sup>

A second aim of this paper is to debunk. The draining of the Hatfield Level was a project of Cornelius Vermuyden and his controversial personality has strongly influenced historiography. To some he is a hero: a brilliant engineer of the Dutch Golden Age who brought civilization to ungrateful, backward English peasants.<sup>9</sup> To others he is almost the personification of evil: the man who made disastrous technical mistakes, destroyed valuable ecosystems and robbed the poor of their commons.<sup>10</sup> Such strong opinions are seldom conducive to good research. As a result, historiography of the draining of the Hatfield Level is confused and incomplete. This paper attempts at presenting a more coherent account of the project, mainly based on documents preserved in Dutch archives and libraries. Since most of these documents were written by the investors or their representatives, this has the additional benefit of casting light on their role in the project, which has been mostly neglected until now.

## II

Hatfield Chase is a wetland area near the confluence of the rivers Don, Torne, Idle, Aire, Went, Trent and Ouse. Most settlements are situated on riverbanks or on 'isles' of pre-Holocene deposits, the most important of which is the north – south oriented ridge of the Isle of Axholme. In the Middle Ages part of the lower lying area was drained by Selby Abbey, but most of it was used as commons by the inhabitants of the adjacent villages.<sup>11</sup> The Crown owned the manor of Hatfield and most manors of the Isle of Axholme, so it could easily grant the drainage of the area

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<sup>5</sup> A.J. Schuurman, 'Mensen maken verschil. Sociale theorie, historische sociologie en geschiedenis', *Tijdschrift voor Sociale Geschiedenis* 22 (1996), p. 203.

<sup>6</sup> R.W. Hoyle, 'Introduction: custom, improvement and anti-improvement' in: R.W. Hoyle, ed., *Custom, improvement and the landscape in Early Modern Britain* (Farnham, 2011), pp. 19-24.

<sup>7</sup> K. Lindley, *Fenland riots and the English Revolution* (London, 1982), pp. 23-33, 71-83, 137, 140-142, 146-157, 188-222, 233-252.

<sup>8</sup> L.E. Harris, *Vermuyden and the fens. A study of Sir Cornelius Vermuyden and the Great Level* (London, 1953), pp. 47, 54; Korthals Altes, *Sir Cornelius Vermuyden*, p. 28.

<sup>9</sup> E.g. Korthals Altes, *Sir Cornelius Vermuyden*. Harris, *Vermuyden*, was more aware of the dark sides of his hero.

<sup>10</sup> E.g. S. Wells, *History of the drainage of the Great level of the Fens called the Bedford Level* (London, 1830), pp. 92-96, 288-289; I.D. Rotherham, *Yorkshire's forgotten fenlands* (Barnsley, 2011).

<sup>11</sup> R. Van de Noort, *The Humber wetlands. The archaeology of a dynamic landscape* (Macclesfield, 2004), pp. 135, 139-140.

to Vermuyden.<sup>12</sup> But the General Drainage Act of 1600 also required permission of the majority of the commoners. The contract of 1626 stipulated that the king was responsible for gaining the consent of the commoners. Although royal commissioners appointed to this task did not manage to reach an agreement with the majority of the commoners, Vermuyden was permitted to start draining the Level in 1627.<sup>13</sup>

The failure to reach an agreement with the commoners resulted in costly litigation, obstruction and destruction of embankments. It should be stressed, however, that the western part of the Level was quite different from the eastern part. In the west, Hatfield Chase proper, commons were limited to rights of turbary (peat digging) and wood cutting. Moreover, this part of the Level was situated in Yorkshire, where the Council of the North had jurisdiction. This Council's president, viscount Wentworth, did not follow the Crown's policy of blindly supporting drainage schemes. In 1630 he negotiated a compromise between the commoners and Vermuyden and his associates which was generous towards the commoners. Vermuyden was not pleased with this outcome, but the result was that the Hatfield part of the Level was pacified and would remain peaceful for the rest of the century.<sup>14</sup> In the Isle of Axholme, the eastern part of the Level, the commons included extensive grazing rights, which were crucial to the pastoral economy of the Isle. They would lose 7,400 of their 13,400 acres of commons.<sup>15</sup> Moreover, an indenture of 1359 had guaranteed the commoners of Epworth, the most important manor of the Isle, that the lords of that manor in the future would refrain from improving common land.<sup>16</sup> So it is not surprising that in this part of the Level resistance to drainage was more fierce and also continued longer.

Vermuyden clearly preferred not to negotiate but to rely on royal support. Since the king was in favour of improvement and he had a powerful ally in the person of Attorney General Sir Robert Heath, he knew he could rely on that.<sup>17</sup> His attitude was less reckless than it might at first seem. After some initial unrest, the Level remained relatively calm during the 1630s. Some riots occurred, but the damage remained limited. Tenant farmers and some of the investors settled in the Level and brought the land into cultivation.<sup>18</sup> It was the outbreak of civil war and the collapse of royal power in 1642 that plunged the Level into chaos. The area was flooded, houses and farmsteads were demolished and the damage was estimated at £ 20,000.<sup>19</sup> Until that year, it seemed Vermuyden had been right. Between c. 1628 and 1642 the main problem was the lack of an efficient organization of the project.

Vermuyden's ruthless attitude is exemplified by the way he concentrated the waters of the river Don, which hitherto had flowed in three channels, into one channel with an outfall into the river Aire. Because this channel and the river Aire now had to carry much more water, the risk of flooding increased. Vermuyden had foreseen this and a strong embankment was constructed on the Hatfield Chase side of the river. Since there was no strong dike on the other

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<sup>12</sup> M. Albright, 'The entrepreneurs of fen draining in England under James I and Charles I: an illustration of the uses of influence', *Explorations in Entrepreneurial History* 8:2 (1955), p. 55.

<sup>13</sup> Harris, *Vermuyden*, p. 50.

<sup>14</sup> Lindley, *Fenland riots*, p. 24; Korthals Altes, *Sir Cornelius Vermuyden*, pp. 109-110.

<sup>15</sup> Korthals Altes, *Sir Cornelius Vermuyden*, p.111. In 1636 they were granted 1,000 acres more.

<sup>16</sup> Lindley, *Fenland riots*, p. 26.

<sup>17</sup> Harris, *Vermuyden*, p. 58; Hoyle, 'Introduction', pp. 21-24.

<sup>18</sup> Lindley, *Fenland riots*, pp. 76-79; Van Lennep, *Van Valkenburg*, p. 58.

<sup>19</sup> W. Dugdale, *The history of imbanking and draining of divers fens and marshes in foreign parts and this kingdom and of the improvements thereby* (2<sup>nd</sup> edition, London 1772), pp. 145-146.

side of the river, this would inevitably result in flooding of the villages on that side.<sup>20</sup> A competent engineer like Vermuyden must have realized that, but he took no measures to protect these villages. Even Vermuyden's participants sympathized with the villagers who cut holes into the new dike of Hatfield Chase and appealed to the Council of the North.<sup>21</sup> Again he seems to have counted on royal support to protect him from the consequences, but this time he was mistaken. In the case of the villagers of Fishlake, Sykehouse and Snaith against Vermuyden and the participants the Council of the North ruled in 1630 that Vermuyden had to cut a new outfall of the river Don towards the river Ouse. Eventually, the cost of digging this 'Dutch River' would amount to £ 20,000.<sup>22</sup> These extra costs threw the drainage consortium into disorder.

### III

From the beginning it was clear that the capital to finance the project would have to be found among Dutch investors. On the day Vermuyden signed the contract with Charles I to drain the area, 24 May 1626 (old style), he also received a passport to travel to the Netherlands to look for investors in the drainage scheme. They had to be found among the economic and political elite of the Republic. Cornelis Vermuyden (1590-1677), although wealthy, only belonged to the rural elite of the island of Tholen, but he had relations with the national elite through relatives of his mother, a member of the prominent Werckendet family from Zierikzee.<sup>23</sup> In 1621, for example, he had been introduced to James I by his cousin Joachim Liens, who was then Dutch ambassador to the Court of St. James's.<sup>24</sup> Vermuyden decided not to proceed in the Dutch way by first forming a company of participants in the project. Instead he undertook to pay for drainage himself, financing this by selling land from his third part in the Level to investors. Vermuyden was to pay for the construction of the main drainage works. After completion of those and adjudication of the land in the Level, the buyers themselves would be responsible for the digging of ditches and construction of roads.<sup>25</sup> After adjudication a Corporation was to be created that could raise taxes for maintenance. Only those who had purchased land from Vermuyden were to pay for maintenance, but they were also granted the right to elect the members of the board of the Corporation, so they would have a say on the level of taxation and the way in which the money was spent.<sup>26</sup>

The investors could pay in installments, the full sum would only be paid after adjudication of the land. What made Vermuyden's proposal even more attractive, was that the participants were only liable for the purchase sum of the land. Normally, a participant in a drainage company was liable for a proportionate share in the costs of the project. If for some reason the costs turned out much higher than expected, he had to pay proportionately more.<sup>27</sup> In this case, Vermuyden alone would be liable for any increase in expenditure.<sup>28</sup> Despite those attractive conditions, Vermuyden's trip to the Netherlands in 1626 was not a success. Only his

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<sup>20</sup> Harris, *Vermuyden*, pp. 49-50.

<sup>21</sup> Noord-Hollands Archief (NHA), Haarlem, Van Valkenburg Family (VVF) 974.

<sup>22</sup> Korthals Altes, *Sir Cornelius Vermuyden*, pp. 35; Harris, *Vermuyden*, p. 53.

<sup>23</sup> *Genealogie Vermue* (s.l., 1996), p. 5.

<sup>24</sup> Harris, *Vermuyden*, pp. 26, 32. Harris claims Vermuyden and Liens were brothers-in-law, but they were cousins.

<sup>25</sup> NHA, VVF, 974.

<sup>26</sup> Korthals Altes, *Sir Cornelius Vermuyden*, appendix II; Dugdale, *The history of imbanking*, p. 144.

<sup>27</sup> P. van Cruyningen, 'Profits and risks in drainage projects in Staats-Vlaanderen, c. 1590-1665', *Jaarboek voor Ecologische Geschiedenis* (2005/06), p. 132.

<sup>28</sup> NHA, VVF, 956, 7 March 1628; VVF, 977.

cousin Johan Liens and Johan de Knuyt, deputy of Zeeland in the federal Chamber of Accounts, both bought at least one thousand acres.<sup>29</sup> He had more success in London, where he had access to the Dutch merchant community through his brother-in-law Jacob Struys. Several merchants of Dutch and Flemish descent were prepared to purchase land in the Level. Success could also be reported from Dordrecht, where Abraham Struys, merchant and mayor of that city, started selling land as an agent for Vermuyden. He probably was a relative of Jacob Struys. Before 1627, he managed to sell about 2,500 acres.<sup>30</sup> This provided Vermuyden with enough money to start the drainage works in the spring of 1627.<sup>31</sup>

The amount of land sold until early 1627 was insufficient to pay for the cost of the whole scheme, which beforehand had been estimated at £ 30-40,000.<sup>32</sup> But in the summer and autumn of 1627 Vermuyden was lucky. Interest in his project was increasing, which caused the price of land he offered for sale to increase. The first plots had been sold for 20 shillings per acre, but in 1627 the price had increased to 80 shillings. In the spring of 1628 it had only slightly decreased to 70 shillings. Even speculation occurred. In August 1627 Johan de Knuyt sold the land he had purchased the year before with a profit of 150 per cent.<sup>33</sup> Even more important was that Jacob Cats, *pensionaris* of the city of Dordrecht, was sent as an envoy of the Dutch Republic to London. Like Vermuyden, Cats was born in the northern part of Zeeland, and it was widely known that he had become rich by investing in wetland reclamation in Zeeland Flanders. The two men met in the summer of 1627 and reached an agreement. This resulted in Cats purchasing no less than 9,472 acres of land in Hatfield Chase.<sup>34</sup>

Jacob Cats bought this land with the intent of selling most of it to investors in the Netherlands. In fact, from the autumn of 1627 he acted as a kind of real estate agent for Vermuyden, like Abraham Struys had done earlier in Dordrecht. Cats was ideally placed to do this, because of his marriage with Elisabeth van Valkenburg, member of a wealthy Amsterdam merchant family. He sold large tracts of land to his brothers-in-law Lucas, Marcus and Mattheüs van Valkenburg, Willem van Wely (married to Maria van Valkenburg) and Fabiaen de Vliet (married to Suzanna van Valkenburg). Except Fabiaen de Vliet, all were merchants and most of the others who bought from Cats were also prominent Amsterdam merchants. Cats did not offer his services for free; he charged three guilders per acre from the purchasers. Since he managed to sell 9,405 acres, this may have yielded some 28,000 guilders.<sup>35</sup>

All in all, 45 people bought land in Hatfield Chase before completion of the project in 1631. Table 1 demonstrates that most of them were merchants and *regenten* (office-holders in major cities) from London, Amsterdam and Dordrecht. There were only two Englishmen among them, the others were Dutch or had roots in the Netherlands, including Flanders and Brabant. In the Netherlands, drainage companies were often formed by tightly knit networks of family and

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<sup>29</sup> NHA, VVF, 955.

<sup>30</sup> Ibid.

<sup>31</sup> Lindley, *Fenland riots*, p. 71. Because the area was flooded in autumn and winter, drainage could only take place in spring and summer. Since Vermuyden travelled to the Netherlands in June 1626, it is unlikely that much work was done in 1626.

<sup>32</sup> R.W. Hoyle, 'Disafforestation and drainage: the Crown as entrepreneur?' in: R.W. Hoyle, ed., *The estates of the English Crown 1558-1640* (Cambridge, 1992), p. 382.

<sup>33</sup> NHA, VVF 956; J. Korthals Altes, *Polderland in Engeland. De geschiedenis van een Zeeuwsch bedijker in de Gouden eeuw en zijne grootsche Hollandsch-Engelsche onderneming* (The Hague, 1924), p. 97.

<sup>34</sup> NHA, VVF 955, 968.

<sup>35</sup> NHA, VVF 955, 1 June 1631; Korthals Altes, *Polderland*, p. 97. Cats' profit may have been smaller, because it is not certain he charged this from all purchasers.

friends and the members were selected either for their ability to provide capital or for their influence on government.<sup>36</sup> Among Vermuyden's associates three networks can be discerned: the Dutch merchants in London, dignitaries and merchants in Dordrecht, and the friends and family of Jacob Cats, mostly Amsterdam merchants. All of them were wealthy, but there were few with political influence in England. Apart from Vermuyden himself only Sir Philibert Vernatti, a Dutchman living in London since 1628, seems to have had some influence at court.<sup>37</sup>

Table 1. Residence and occupation of participants in the drainage of Hatfield Chase, 1626-1631

	Merchant	<i>Regent</i>	Army officer	Professor	Unknown	Total
London	9	.	2	.	2	13
Amsterdam	9	.	.	.	1	10
Dordrecht	2	5	.	.	3	10
Middelburg	.	2	.	.	1	3
The Hague	.	2	.	.	.	2
Haarlem	2	.	.	.	.	2
Leiden	.	.	.	1	.	1
Rotterdam	1	.	.	.	.	1
St.Maartensdijk	.	1	.	.	.	1
Unknown	.	.	.	.	.	2
Total	23	10	2	1	9	45

Main sources: Noord-Hollands Archief, Haarlem, Van Valkenburg family, 955, 968; Korthals Altes, *Sir Cornelius Vermuyden*, pp. 65-66 ; Van Lennep, *Van Valkenburg*, pp. 157-159; W.J. C. Moens, *The marriage, baptismal and burial registers, 1571 to 1874, and monumental inscriptions of the Dutch Reformed Church, Austin Friars, London* (Lymington, 1884).

#### IV

The enthusiasm of Dutch investors for the Hatfield Chase project in 1627 was understandable. In the autumn of that year Vermuyden claimed the drainage scheme was almost completed and petitioned the king for the appointment of commissioners to adjudicate the drained land, so it seemed the investors could start reclaiming and settling their lands in 1628.<sup>38</sup> They only had to pay the purchase price agreed with Vermuyden or Cats, at most 70-80 shillings per acre or 93-107 guilders per hectare,<sup>39</sup> which was a low price compared to similar projects in the Netherlands. They were soon to be disappointed.

Vermuyden had promised the investors they could start reclaiming their lands in 1628, so in the spring of that year they shipped tenant farmers and farm equipment to Hull only to discover that most of the Level was still flooded and nothing could be done. Later Vermuyden denied he had promised this, but it is highly unlikely that the participants would have sent their

<sup>36</sup> H. van Zwet, *Lofwaardighe dijkagies en miserabele polders. Een financiële analyse van landaanwinningprojecten in Hollands Noorderkwartier, 1597-1643* (Hilversum, 2009), p. 54.

<sup>37</sup> Korthals Altes, *Sir Cornelius Vermuyden*, pp. 53-54.

<sup>38</sup> Harris, *Vermuyden*, p. 49.

<sup>39</sup> Accounts in NHA, VVF 955, show that 1 £ sterling = 1.8 £ Flemish = 10.8 guilders.

tenants without any guarantee that the land could be cultivated.<sup>40</sup> It took until 1631 to complete the drainage scheme and only in the spring of that year the investors could start to reclaim and settle the land.<sup>41</sup> Obstruction and sabotage by the commoners certainly was a cause of the delay, but technical problems may have played a part too since Vermuyden had no experience with large-scale fenland drainage.

Another factor that caused delay was that Vermuyden seems to have been almost continually short of cash. The installments the investors had to pay were not sufficient. As soon as he had sold land to Jacob Cats, Vermuyden started to draw bills of exchange on the sums Cats owed to get his hands on some cash. Within a month from the signing of the contract whereby Cats sold land in the Level to his friends and relatives – 7 March 1628 – Vermuyden and his clerk and business partner Marcellus van Deurne started to draw bills of exchange on them too.<sup>42</sup> This behaviour and the delays caused the investors to lose trust in Vermuyden. In a letter to his brother-in-law Mattheüs van Valkenburg from 13 November 1628 Cats made clear he had lost all faith in Vermuyden. He felt like ‘a willing horse one tries to overburden’ because of all the bills Vermuyden had drawn on him.<sup>43</sup>

In 1629 the Dutch investors reached the conclusion Vermuyden could no longer be trusted with the financial management of the drainage project. They decided to establish a company that would from then on raise *omslagen* (rates) from all participants to guarantee a steady flow of cash to continue the project. From 18 April 1629 to 15 July 1634 eleven times a rate was raised varying from two to six shillings per acre. Apart from that, the participants continued to pay the installments on the purchase sum.<sup>44</sup> Like Dutch drainage companies this company had a board (in Dutch: *College van Heemraden*) elected by the participants from their midst. For practical reasons, in this case members of the board were most probably elected from the participants living in England. Treasurer of the company was Mattheüs, the youngest of the Van Valkenburg brothers, sent to England to keep an eye on the family interests. Clerk was Marcellus van Deurne, Vermuyden’s assistant.<sup>45</sup> This shows that the participants had not lost trust in Vermuyden’s engineering qualities. For the next couple of years, the company and Vermuyden continued to cooperate. In May 1632, for example, Vermuyden and board members of the company Sir Philibert Vernatti, Samuel van Peenen, Mattheüs van Valkenburg and Johan Corselis together purchased the land required to cut the Dutch River and in 1634 Vermuyden was asked for advice about improvement of drainage in the southern part of the Level.<sup>46</sup>

The creation of the company meant an improvement of the financial organization of the drainage scheme, but it had one weak spot: contrary to Dutch companies it was not incorporated and could not impose sanctions on free riders. As long as only the payment of the ordinary rates was concerned, this did not pose many problems. All participants had joined the company of their own volition and accepted the obligation to pay rates. In the case of exceptional expenses, however, difficulties could arise. Charles I had granted the settlers the right to have their own church in the Level and in 1639 Sir Philibert Vernatti, Mattheüs van Valkenburg and other members of the company’s board made a contract with Isaac Bedloe to build a church at Sandtoft. Bedloe built the church, but in 1660 he was still waiting for his money. The other

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<sup>40</sup> NHA, VVF 968, 974.

<sup>41</sup> NHA, VVF 955, 1 June 1631.

<sup>42</sup> NHA, VVF 974; Korthals Altes, *Polderland*, p. 104.

<sup>43</sup> Korthals Altes, *Polderland*, pp. 104-106.

<sup>44</sup> NHA, VVF 966.

<sup>45</sup> Korthals Altes, *Sir Cornelius Vermuyden*, p. 89.

<sup>46</sup> Van Lennep, *Van Valkenburg*, p. 45; Korthals Altes, *Sir Cornelius Vermuyden*, pp. 119-120 and appendix VIII.

participants claimed the board members had to pay for the church themselves and refused to pay rates for it.<sup>47</sup>

The high rate of July 1634 (six shillings per acre) seems to have been paid by the participants,<sup>48</sup> but afterwards they ran up arrears. This was caused by the construction of the Dutch River. Although the Council of the North had ruled in 1632 that the participants had to pay part of the costs of cutting this canal, all participants refused to do this. They had good reasons to do so, because their contracts with Vermuyden stipulated that he was liable for extra expenditure. The Council of the North seems to have been aware of this condition because it permitted the participants to sue Vermuyden for ‘any great sum of monies’. It still insisted, however, that the participants first had to pay their share ‘according to every mans proportion of acres’.<sup>49</sup> Vermuyden also refused to pay because these extra costs would have wiped out part of the profit he was hoping to make (cf. section V). A stalemate ensued during which the work on the Dutch River was continually hampered by lack of cash.

The Council of the North had hoped that a Commission of Sewers would be able to achieve a breakthrough, so in 1635 the Commission of Sewers of Hatfield Chase was created. Commissions of Sewers had existed since the later Middle Ages. Their task was to oversee the maintenance and repair of drains, embankments and sluices. They were composed of local landowners who could summon juries. On the basis of the presentment of these juries about the state of drains and embankments, what was to be done to repair them and which landowners were liable for maintenance, the Commission of Sewers could raise rates (scotts) from landowners and impound and sell their land if they refused to pay.<sup>50</sup> In Hatfield Chase, there was no doubt about which landowners were liable for maintenance of the new drainage system. They were the participants who had purchased the 24,505 acres sold by Vermuyden, the ‘scotted lands’.<sup>51</sup> Among the 106 Commissioners of Sewers appointed in 1635, there were only 14 owners of scotted lands. So decisions about the scotts to be paid by the participants were to be taken by a group of landowners most of whom were not directly involved and would not have to pay those taxes themselves. For the Dutch this was difficult to accept, because they adhered to the rule that those who had an interest in the maintenance of drainage systems and embankments would have to pay for it, but also would themselves decide about how much was to be paid. This resulted in a bad relationship between the Commission of Sewers and the participants. The participants even hired mercenaries to keep the tax collectors of the Commission of Sewers out of the Level.<sup>52</sup> Moreover, the authority of the Commission of Sewers was undermined by Charles I. When the Commission impounded the land of Sir Philibert Vernatti and other participants, the king intervened in 1637 and forced the Commission to restore the land to the owners.<sup>53</sup>

The Commission of Sewers had authority – as long as the king did not intervene – but lacked legitimation in the perception of the rate payers, while the company of drainers had legitimation but lacked authority. The solution to this stalemate would have been to implement the conditions of the 1626 contract between Vermuyden and the king and incorporate the company of the participants as a water board with authority to raise rates. In a last attempt to do

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<sup>47</sup> Korthals Altes, *Sir Cornelius Vermuyden*, appendix IX, p. 87; appendix X, pp. 119-120.

<sup>48</sup> NHA, VVF 966.

<sup>49</sup> Korthals Altes, *Sir Cornelius Vermuyden*, appendix VI, pp. 58-59.

<sup>50</sup> H.C. Darby, *The medieval Fenland* (Cambridge, 1940), pp. 163-164.

<sup>51</sup> Korthals Altes, *Sir Cornelius Vermuyden*, pp. 43-44, appendix II.

<sup>52</sup> *Ibid.*, p. 125.

<sup>53</sup> *Ibid.*, pp.123-124.

this, the participants introduced a bill in parliament in 1660, but it was rejected.<sup>54</sup> For the next two centuries the participants and the Commission of Sewers were forced to cooperate as best they could. Only in 1862 was the Hatfield Chase Corporation was created.

## V

The general verdict about the drainage of Hatfield Chase is that it was a financial failure. Technical mistakes, the conflicts between Vermuyden and the commoners and between the participants and Vermuyden caused an enormous increase in costs and often made it impossible for the participants to settle the land and earn any income from it. Only William Dugdale painted a positive picture of Hatfield Chase.<sup>55</sup> He was a propagandist for drainage, so he is often supposed to have provided a much too rosy image of the results. In this case, however, there are good reasons to take him seriously. He was clearly well informed, because he was the only author who knew it had taken five years to drain the Level. He visited the Level in 1657, when Marcus van Valkenburg Jr., nephew of Mattheüs van Valkenburg, the first treasurer of the company, was still living there as steward of the Van Valkenburg estate. If he visited Marcus van Valkenburg then, he had a very well informed source. Documentary sources confirm several of Dugdale's remarks.

When assessing the financial outcome of the project, it should be realized that Vermuyden and the participants had different interests. Vermuyden had to make a profit by selling land in the Level at high prices and keeping costs low. The participants had to make a profit by selling the land they had purchased from Vermuyden at higher prices, or by leasing it to tenant farmer at a good price, or by cultivating it themselves. Let us first take a look at Vermuyden's expenditure and income from the drainage. Table 2 gives an overview of the receipts and expenditure from 1627 to July 1634 as far as we know them.

Table 2. Receipts and expenditure of Cornelius Vermuyden for the drainage of Hatfield Chase, 1627-1634 (in £)

Receipts		Expenditure	
Purchase sums and rates paid by the participants	104,214	Basic drainage scheme	55,825
Sale of manors (Finningley, Althorp)	7,850	Purchase of the share of Charles I	16,800
Sale of 4,554 acres	?		
Sale of manors (Hatfield, Thorne)	?		
	>112,064		72,625

Sources: NHA, VVF 955, 966; Dugdale, *The history of imbanking*, p. 145.

<sup>54</sup> Ibid., appendix X; W.B. Stonehouse, *History and topography of the Isle of Axholme: being that part of Lincolnshire west of Trent* (London, 1839), p. 101.

<sup>55</sup> Dugdale, *The history of imbanking*, pp. 144-146.

According to Dugdale, the implementation of the basic drainage scheme cost £ 55,825.<sup>56</sup> To this we shall add the sum of £ 16,800 for which Vermuyden purchased several manors and the king's share in the drained land.<sup>57</sup> So his expenditure amounted to £ 72,625. A claim of six participants in a Dutch lawsuit against Vermuyden provides an exact overview of everything they spent on purchase sums of land and rates for the drainage company until July 1634.<sup>58</sup> If we extrapolate their expenditure to all participants, they contributed over £ 104,000 to the project. To this has to be added the sale of several manors Vermuyden had bought from Charles I and of the 4,554 Vermuyden still owned in 1633, but which he shortly afterwards sold to John Gibbon. Vermuyden made a tremendous profit of at least £ 30,000 and probably considerably more. This also explains why in the early 1630s Vermuyden was able to spend large sums on the purchase of Malvern Chase (£ 5,000), King's Sedgemoor (£ 12,000) and a share in a lead mine in Derbyshire.<sup>59</sup>

The obligation to cut the Dutch River did not really threaten Vermuyden's rosy prospects. Even if he would have had to pay the full cost of £ 20,000, he still would have made a very handsome profit. It is unlikely, however, that he ever contributed this sum. The participants began a suit in Chancery against him in 1633 and in that year even had him imprisoned for his refusal to pay. When he was released and somebody asked how the suit was proceeding 'he scoffingly answered that it would be time enough seven years hence to ask that question'.<sup>60</sup> Obviously, he intended to wear out his opponents in an endless lawsuit, and he succeeded: in 1642 the suit was still dragging on.<sup>61</sup> One of the reasons he could succeed in this was that he committed conspicuously little in writing. Letters from Vermuyden to the participants in the Netherlands hardly contained any information about the progress or the difficulties of the drainage scheme and most contracts with the participants were signed by his cousin Johan Liens.<sup>62</sup> A contract of 30 March 1630, for example, was signed by Liens *weghen d'heer Vermuyden gereserveert seeckere open staende punten* (on behalf of Mr. Vermuyden apart from some outstanding issues).<sup>63</sup> These outstanding issues were not specified. Such vague clauses made it possible for him to deny having agreed to all conditions and he also denied that Abraham Struys and Jacob Cats ever sold land as his agents.<sup>64</sup> These were probably all blatant lies, but the participants could not gather enough evidence to prove that.

Because several participants had not bought directly from Vermuyden, but from Jacob Cats, they also began a suit in Holland against Cats. Cats had guaranteed them – albeit as agent for Vermuyden – that their liability would not exceed the purchase price of their land, so they tried to get their money back from him. In December 1633 Vermuyden warned Cats they were planning to do this and he advised him to negotiate a compromise with his brothers-in-law.<sup>65</sup> In between the lines he warned Cats he was not to expect any support from him. Jacob Cats got caught between hammer and anvil: in Holland the participants demanded money from him and in London Vermuyden was denying that he had ever had an arrangement with Cats. Luckily for

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<sup>56</sup> Ibid.

<sup>57</sup> Korthals Altes, *Sir Cornelius Vermuyden*, appendices III and IV.

<sup>58</sup> NHA, VVF 966.

<sup>59</sup> Harris, *Vermuyden*, p. 53.

<sup>60</sup> Harris, *Vermuyden*, p. 56.

<sup>61</sup> NHA, VVF 974.

<sup>62</sup> NHA, VVF 951, 952, 948 (12 March 1641).

<sup>63</sup> NHA, VVF 955.

<sup>64</sup> NHA, VVF 968, 2 April 1635.

<sup>65</sup> NHA, VVF 951, 13 December 1633.

Cats this suit also came to nothing. It was still dragging on in 1641.<sup>66</sup> His reputation, however, was damaged and the relationship with his family-in-law was ruined.

Estimating the profits or losses of the participants is less easy. Their costs until July 1634 are clear: they spent £ 104,214. These costs included the draining of the level, repair of the damage done by the commoners and part of the expenditure of cutting the Dutch River. This was 139 guilders per hectare. Comparison with drainage projects in the Netherlands in which some of the participants also had shares shows this was a low sum. Draining lake Beemster (1607-12), lake Heerhugowaard (1625-30) and lake Schermer (1633-35) cost 290, 373 and 514 guilders per hectare respectively.<sup>67</sup> Marshland drainage in Zeeland Flanders, in which Jacob Cats had participated, cost on average 180 guilders per hectare.<sup>68</sup> Admittedly, Schermer and Heerhugowaard were financial failures, but Beemster and marshland drainage generated large profits for the participants. The participants had to pay more than they had expected, but the cost of drainage still was relatively low and it cannot have caused a failure of the project. Later it was claimed that the participants had spent a total sum of £ 200,000, 300,000 or even 400,000. The highest sum the participants themselves ever claimed to have spent was £ 200,000. This probably included the costs of reclamation and settlement. Since they did this c. 1650 in a lawsuit against the commoners of Epworth, they probably overestimated their costs, so we can take this sum as the upper limit of their expenditure.<sup>69</sup> This means they spent at most 218 guilders per hectare. Of course, the lawsuits also cost considerable sums, but we have no indication of the amount of these costs.

The costs of draining the Hatfield Level were not exceptionally high, but maybe the participants were not able to raise income from the reclaimed land because of defective drainage or destruction of their property by the commoners. Both commoners and participants indeed claimed Vermuyden's drains were ineffective, but they did this in lawsuits in which both had an interest in painting the situation in the darkest colours. The participants wanted to show how little their investments had earned them and the commoners wanted to show Vermuyden not only robbed them of part of their commons, but had also diminished their quality. Dugdale painted a quite different picture: rape- or coleseed was sown in the area and in 1657 four windmills between Sandtoft and Thorne were bruising the seed to produce oil.<sup>70</sup> This number of mills means a considerable acreage was sown with rapeseed and since rape is a winter crop this implies that Vermuyden had drained a substantial part of the Level so well that winter crops could be cultivated there.

Several other sources confirm Dugdale's opinion. Extracts from the accounts of Pieter Cruypenninck show that from 1632 amounts of rapeseed were regularly sold or exported to Rotterdam.<sup>71</sup> Letters from Marcus van Valkenburg to his lawyer from April 1636 mention large acreages of rapeseed and other winter crops that were promising good harvests.<sup>72</sup> It was widely known that rapeseed could yield enormous harvests on recently drained land. Dugdale demonstrated this was also the case in the Hatfield Level. A plot of rapeseed in Haxey Carr

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<sup>66</sup> NHA, VVF 948, 12 March 1641.

<sup>67</sup> Van Zwet, *Lofwaerdighe dijckagies*, p. 316.

<sup>68</sup> Van Cruyningen, 'Profits and risks', p. 139.

<sup>69</sup> Korthals Altes, *Sir Cornelius Vermuyden*, p. 39.

<sup>70</sup> Dugdale, *The history of imbanking*, p. 145; J. Thirsk, *English peasant farming. The agrarian history of Lincolnshire from Tudor to recent time* (London and New York, 1981), p. 128.

<sup>71</sup> NHA, VVF 955.

<sup>72</sup> NHA, VVF 948, 7 and 22 April 1636.

yielded an amount of seed sold at 150 shillings per acre or 200 guilders per hectare.<sup>73</sup> One such harvest was almost enough to cover all expenses of draining the land. It is known from drainage schemes in England, the Netherlands and Germany that the first couple of harvests of rapeseed were at least sufficient to cover a large part of the expenses.<sup>74</sup> It is also telling that although the commoners publicly vilified Vermuyden's scheme, privately their views were less negative. In a meeting in October 1651 they agreed that the drainage scheme should be maintained.<sup>75</sup> If Vermuyden's drainage scheme was entirely deficient, why would one want to maintain it?

Of course, the participants might have been prevented to reap their harvests because the commoners destroyed them. Part of the harvest was indeed destroyed in 1633,<sup>76</sup> but afterwards it hardly occurred until 1642 and after that year the commoners limited their attacks to the 7,400 acres of the manor of Epworth that were disputed. The remaining 17,100 acres were undisputed and remained in peaceful possession of the participants.<sup>77</sup> Until 1642, participants were able to reap rich harvests, but it should be kept in mind that not all of them were so lucky as to be able to sow much of their land with rapeseed. In 1631, one of the participants complained that of his 600 acres only 30 could be used as arable.<sup>78</sup>

Many of the original participants sold their land in the 1630s. That was not unusual. In the Netherlands too part of the investors in drainage companies considered their participation as a short-term investment and sold their share shortly after completion of drainage.<sup>79</sup> In the case of Hatfield Chase the number of owners selling quickly may have been higher because many participants preferred not to be involved in long drawn-out litigation. Another problem was that it was difficult to manage a large property in a foreign country. It was difficult to find reliable stewards or tenants and communication was not always easy, especially during wartime. In January 1629 Vermuyden wanted to send a letter to one of the participants in the Netherlands, but he had to wait until a convoy had arrived on the Thames. That such a convoy was not a luxury was shown in 1636, when one of Mattheüs van Valkenburg's reports to his brothers disappeared because the ship carrying it was taken by privateers.<sup>80</sup> Those selling their land very probably made a good bargain. A lively land market existed in the Level in the 1630s and land was sold at high prices. This also indicates that agriculture in the Level was doing well. This was confirmed by Daniel Noddell, the advocate of the commoners of Epworth, certainly not someone who had cause to paint a rosy picture of the situation in the Level.<sup>81</sup>

An argument in favour of the view that the drainage of Hatfield Chase was a failure, was that some of the original participants went bankrupt. The Van Valkenburg brothers indeed experienced financial difficulties and Marcus went bankrupt in 1642.<sup>82</sup> This bankruptcy was caused by several losses in enterprises and transactions. The main cause of trouble for the Van Valkenburg brothers seems to have been their brother-in-law Willem van Wely. This Amsterdam jeweler in 1629 and 1630 borrowed the enormous sum of 86,000 guilders from Marcus and Lucas van Valkenburg. The securities for these loans were jewels and 700 acres of land in Hatfield

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<sup>73</sup> Dugdale, *The history of imbanking*, p. 145.

<sup>74</sup> Van Cruyningen, 'Profits and risks', p. 126; Thirsk, *English peasant farming*, p. 133.

<sup>75</sup> Lindley, *Fenland riots*, p. 206.

<sup>76</sup> *Ibid.*, p. 78.

<sup>77</sup> *Ibid.*, pp. 24, 211.

<sup>78</sup> Korthals Altes, *Sir Cornelius Vermuyden*, p. 80.

<sup>79</sup> Van Cruyningen, 'Profits and risks', pp. 133-134.

<sup>80</sup> NHA, VVF 948, 7 April 1636, and 952.

<sup>81</sup> Korthals Altes, *Sir Cornelius Vermuyden*, appendix IX, p. 96.

<sup>82</sup> Van Lennep, *Van Valkenburg*, pp. 41, 70.

Chase purchased through Jacob Cats. This land was not yet drained nor paid for. To strengthen this fragile security Marcus and Lucas persuaded Cats to sign an IOU to them for 6,000 guilders.<sup>83</sup> When Willem van Wely was not able to pay the full purchase sum, Cats sold 350 acres of Van Wely's land to Philip Jacobsen, a Dutch merchant in London. This of course made Van Wely's security worthless.<sup>84</sup> Setbacks like these can hardly be blamed to the Hatfield Chase project.

Those who still owned land over here in the 1640s, like the Van Valkenburg brothers and Vernatti, very probably incurred heavy losses, especially after the wave of destruction that swept over the Level in 1642 and after the commoners of Epworth had regained their commons by 1650. Especially for the Van Valkenburg brothers this must have been a bitter disappointment, because they had invested heavily in improvement of the Level. In 1632, for example, they contracted with master carpenter and mill builder Hendrick Gijsbertsz from Vianen, who was to construct sluices and windmills in the Level.<sup>85</sup> Between 1628 and 1635 Lucas van Valkenburg spent 55,400 guilders to drain 1,000 acres, but at the time of his death in 1652, his land in the Hatfield Level was valued at only 49,000 guilders. During the intervening years, the commoners had caused much damage and had even regained possession of much of the land that had been adjudicated to Lucas.<sup>86</sup> But already by the early 1640s most Dutch investors had sold their land in Hatfield Chase, only the Vernatti, Van Valkenburg and Van Peenen families owned land in the Level until the 1650s and after.

## VI

The drainage of the Hatfield Level was not such a financial disaster as has been commonly assumed. Vermuyden himself made a huge profit and those investors who sold their share before 1642 probably also did not have reason to complain. Still, it caused the participants a lot of trouble: commoner riots and all kinds of litigation led to many extra costs and friendships and relations between family members were ruined. Many of these difficulties could have been prevented if Dutch institutions had been applied. Was this because these institutions did not fit into the English context or because of individual choices of Vermuyden and others involved? The latter seems the case. It was Vermuyden's choice not to found a company to drain the Level. Elsewhere, like in the Bedford Level, drainage companies were formed and also incorporated, with the right to raise rates, and the Bedford Level Corporation existed until 1920.<sup>87</sup>

At first sight it might seem much more difficult to transplant the Dutch tradition of consensus and compensation of third parties to England, because commoner riots accompanied all seventeenth-century English drainage schemes.<sup>88</sup> This, however, was primarily caused by the antagonistic attitude of Crown and drainers towards the commoners and their interests. Compromise could be accomplished in England too, as was demonstrated by the intervention of the Council of the North in Hatfield Chase in 1630. The verdict of the Council put an end to unrest in the Yorkshire part of the Level by taking the grievances of the villagers into account. But Crown and entrepreneurs were not prepared to compromise: 'improvement' and profit were

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<sup>83</sup> Ibid., p. 47; NHA, VVF 961, 20 April 1630.

<sup>84</sup> NHA, VVF 970.

<sup>85</sup> Van Lennep, *Van Valkenburg*, p. 64.

<sup>86</sup> NHA, VVF 11.

<sup>87</sup> D. Summers, *The Great Level. A history of drainage and reclamation in the Fens* (Newton Abbot, 1976), pp. 33-66, 79-83, 218.

<sup>88</sup> Lindley, *Fenland riots*, passim.

not to be impeded by negotiating with conservative peasants. In the political climate of Charles I's personal rule, compromise was not popular. After the Restoration, when it had become very clear that royal power had its limits, the attitude of king and drainage entrepreneurs changed considerably and tried to gain the support of the commoners.<sup>89</sup>

In the political context of the 1620s and 1630s it was difficult to export the consensus oriented attitude of the Dutch to England. But even if it had been easier, it is doubtful whether Vermuyden would have tried to do so. He ruthlessly pursued his goals, trusting that the Crown would clear away any obstacles. His attitude towards the villagers to the west of the Hatfield Level is an illustration of this. He deliberately created a situation that seriously increased the risk of flooding for the villages of Fishlake, Snaith and Sykehouse. In the Dutch Republic, the required government patent would have forced him to provide better flood protection for those villages. The lack of regulation in England gave him the opportunity to abstain from such works. He grabbed this opportunity to cut expenditure and expected the Crown to deal with the resulting conflicts. In this case, he was to be disappointed because of the intervention of Wentworth and the Council of the North.

This is very different from the attitude of that other Dutchman, Humphrey Bradley, who drained wetlands in France in the first quarter of the seventeenth century. Although royal edicts of 1599 and 1607 granted Bradley and his association of investors many benefits and guaranteed them royal support, they proceeded carefully. The edicts granted them ownership of 2/3 of the drained land, but in 1617, for instance, they accepted a share of no more than 3/7 after negotiations with the landowners in the area.<sup>90</sup> When peasant communities lost commons and protested or rioted, Bradley and his associates negotiated with them and offered compensation that usually put an end to resistance. When required, government officials intervened to support drainage schemes, but their attitude was more flexible than that of the English Crown. They were more prepared to accept compromises and grant some compensation to commoners and landlords whose interests were harmed by drainage.<sup>91</sup>

Bradley and other engineers were employed by drainage companies and were paid by granting them a share in the reclaimed land. Cornelius Vermuyden was the only engineer who tried to finance a drainage project himself without the backing of a company of investors. This experiment clearly was a failure and it was not repeated. When he was draining the Bedford Level from 1638 and again from 1649, he did so as an employee of Charles I and the Bedford Level Corporation respectively. Margaret Albright was almost certainly right in assuming that Vermuyden was rejected as engineer and 'undertaker' for the first attempt at draining the Bedford Level because Dutch investors had lost trust in his financial ability because by then the financial chaos in the Hatfield Level must have become widely known among the Dutch elite.<sup>92</sup> Clearly, a brilliant engineer was not necessarily also a good entrepreneur.

Transplanting an attitude of consensus and compromise to England was not feasible in the political climate of Charles I's reign. Other Dutch institutions, however, could have been exported. That this did not happen was the result of the decisions taken by Cornelius

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<sup>89</sup> J. Thirsk, *Agricultural change: policy and practice. Chapters from the Agrarian History of England and Wales* (Cambridge, 1990), pp. 199-200.

<sup>90</sup> R. Morera, *L'assèchement des marais en France au XVIIe siècle* (Rennes, 2011), pp. 150, 155.

<sup>91</sup> *Ibid.*, pp. 159-161, 177.

<sup>92</sup> M. Albright Knittl, 'The design for the initial drainage of the Great Level of the Fens: an historical whodunit in three parts', *Agricultural History Review* 55 (2007), pp. 29-30.

Vermuyden, whose fascinating and controversial personality was aptly described by his biographer Harris:

‘His was a masterful personality prepared to bear any consequences. Not in any spirit of meekness, but as a fighter ready to give as much as he received, and more. Often tactless, always resourceful and replete with energy and, it might appear, generally concerned more with the interests of Cornelius Vermuyden than with those of his fellow participants’.<sup>93</sup>

A man like this could indeed make a difference, for good or for bad.

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<sup>93</sup> Harris, *Vermuyden*, pp. 54-55.