

## Environmental Change and Globalization in Seventeenth-Century France: Dutch Traders and the Draining of French Wetlands (Arles, Petit Poitou)\*

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**SUMMARY:** Between 1599 and the end of the 1650s, the French Crown sustained a policy of land reclamation at a large scale. It was led by the French aristocracy who were helped by representatives of the merchant elites of Amsterdam, such as Hieronimus van Uffelen and Jean Hoeufft. The works in both Arles (Provence) and Petit Poitou (Poitou) show that land reclamation involved a radical change in society, reinforced the authority of the Crown in the areas concerned, and disrupted the former social balances built around the marshes. Thus, land reclamation aroused several conflicts which revealed its deep impact on the environment. So, this article demonstrates how the making of the modern state, backed by the development of European trade and banking, caused ecological and social changes by connecting the political and financial powers on a European scale.

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In the long-term history of wetlands, the sixteenth century represents a turning point as at that time very large funds were injected into a new system of drainage.<sup>1</sup> In the Low Countries and in northern Italy more than anywhere else, the conquest of the wetlands turned into an extensive business.<sup>2</sup>

The change was particularly marked in Holland, where people were obliged to manage the consequences of the intensive mining of peat which had occurred during the Middle Ages.<sup>3</sup> To drain the lakes created by the

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1. John F. Richards, *The Unending Frontier: An Environmental History of the Early Modern World* (Berkeley, CA [etc.], 2003).

2. Salvatore Ciriaco, *Acque e agricoltura. Venezia, l'Olanda e la bonifica europea in Età Moderna* (Milan, 1994), pp. 208–242.

3. Karel Leenders, *Verdwenen venen. Een onderzoek naar de ligging en exploitatie van thans verdwenen venen in het gebied tussen Antwerpen, Turnhout, Geertruidenberg en Willemstad,*

resulting subsidence, the Dutch employed new techniques, using wind-mills to divert water into canals and rivers. The spread of this model, called the *boezem* system, enabled the extension of agricultural land and the growth and urbanization of the population. It marked the beginning of a new relationship between human societies and marshes, as the drainage work was supported by the central political authorities and financed by capitalist groups.<sup>4</sup> That development was enhanced in the last twenty years of the sixteenth century when refugees from Flanders and Brabant put their money into drainage projects in the northern Netherlands.<sup>5</sup>

As early as the 1580s, the water-management skills of the Dutch had become a model throughout Europe. The role of Dutchmen in the draining of wetlands could be documented in such very different regions as Britain, Germany, Russia, Italy, and France.<sup>6</sup> In England, Humphrey Bradley, a Dutch engineer and a native of Bergen op Zoom in Brabant, came to drain the Fens in the 1580s.<sup>7</sup> Soon after, Bradley was called to France, where he launched a wave of land reclamation. From 1599 to the end of the 1650s, the intervention of foreign engineers and financiers was continuous. At least 12 swamps were drained and no fewer than 150 and perhaps as many as 260 square kilometres of wetlands were converted to arable lands or meadows. That surface area can be compared to the 1,115 square kilometres which the Dutch, who in contrast to the French were short of arable land, drained in the meantime for themselves.<sup>8</sup>

The draining of French wetlands was thus a major event, and can usefully be analysed in its European context. Indeed, the alliance between the French monarchy and foreign merchants and bankers who were interested in international trade was the only means to carry out drainage projects in France, so the draining of French marshes was strongly embedded in the internationalization of the seventeenth-century economy.

1250–1750 (Brussels, 1989); Gerardus van de Ven, *Man-Made Lowlands: History of Water Management and Land Reclamation in the Netherlands* (Utrecht, 1993); Milja van Tielhof and Petra van Dam, *Waterstaat in stedenland. Het hoogbeemraadschap van Rijnland voor 1857* (Utrecht, 2006), pp. 52–86.

4. Van Tielhof and van Dam, *Waterstaat in stedenland*, pp. 152–179; Siger Zeischka, *Minerva in de polder. Waterstaat en techniek in het hoogbeemraadschap van Rijnland, 1500–1865* (Hilversum, 2008), pp. 198–239.

5. See for instance *Extract uyt het octroy van de Beemster met de cavel-conditien en de caerten van dien. 't Register van de participanten. Ende verscheyden keuren tot welstand van de dijkage. Bij de Hoofst-inghelanden, dickgraef ende heemraden gemaect* (Amsterdam, 1613).

6. Ciriaco, *Acque e agricoltura*, pp. 243–310.

7. H.C. Darby, *The Draining of the Fens* (Cambridge, 1956); L.E. Harris, *The Two Netherlanders: Humphrey Bradley and Cornelis Drebbel* (Leiden, 1961); *idem*, *Vermuyden and the Fens: A Study of Sir Cornelius Vermuyden and the Great Level* (London, 1953).

8. Jan de Vries and Ad van der Woude, *The First Modern Economy: Success, Failure and Perseverance of the Dutch Economy, 1500–1815* (Cambridge, 1997), p. 32.

Although the French had money to invest, Dutch bankers were more readily able to provide funds, resources, and skills. As the main investors were not natives of the regions where the land reclamation had taken place, the drainage operations caused conflicts which reveal the socio-political significance of land reclamation. Moreover, as both the cases of Arles (Provence) and Petit Poitou (Poitou) show, such projects launched by Henri IV had a far-reaching environmental impact.<sup>9</sup>

LAND RECLAMATION IN SEVENTEENTH-CENTURY  
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In 1583, Henri III granted an entitlement to drain the lake of Pujaut (Gard, Languedoc) in southern France.<sup>10</sup> In 1599, Henri IV continued the policy and changed the scale of its application by promulgating an edict which promoted land reclamation throughout the kingdom.<sup>11</sup> He gave Humphrey Bradley the power to drain all of France's lakes and marshes. That same year, Bradley joined Conrad Gausсен, a Dutch merchant who had settled in Bordeaux, in order to drain the marshes there and those of Lesparre, located in the low estuary of the Gironde (Guyenne).<sup>12</sup> In 1600, Bradley attempted to extend his activities to the French Atlantic coast and started to drain the Tonnay-Charente marshes (Charente-Maritime). Despite the support of the monarchy and the creation of a very favourable legal framework, Bradley could not cope alone with the opposition he had to face.<sup>13</sup> He had to contend with former users of swamps, and he barely managed to raise enough money to finance his projects.

In 1605, therefore, he set up an association with the Comans brothers and François de la Planche, or van der Planken.<sup>14</sup> Even though the first

9. Even though these works began in Bordeaux (Guyenne), after the publication of a *privilege* in 1599, I will highlight two cases, Arles (Provence) and Petit Poitou (Poitou), completed in the 1640s.

10. A. Coulondres, "Notices sur le dessèchement des étangs de Rochefort et de Pujaut", *Mémoires et comptes-rendus de la société scientifique et littéraire d'Alais* (1876), pp. 15–54.

11. *Edict pour le dessèchement des marais portant commission à cet effet à un étranger* (Fontainebleau, 1599).

12. Edouard de Dienne, *Histoire du dessèchement des lacs et marais en France avant 1789* (Paris, 1891), pp. 117ff.; R. Morera, "Les assèchements de marais en France au XVIIe siècle (1599–1661). Technique, économie, environnement" (Ph.D., University of Paris 1 Panthéon-Sorbonne, 2008), [hereafter, "Les assèchements de marais XVIIe siècle"].

13. *Edict du roy pour le dessèchement des Marais* (Paris, 1607); *Arrest et reglement fait par le roy en son conseil sur le dessèchement des marais de France* (Paris, 1611); *Declaration du roy, faite sur l'interprétation & modification de l'Edict fait en faveur du dessèchement des marais en France* (Paris, 1613).

14. Archives Nationales, Paris [hereafter, AN], Minutier central [hereafter, MC], LIV 464, 19 janvier 1605.

contract does not mention him, Hieronimus van Uffelen was also involved in this company.<sup>15</sup> The Comans and de la Planche were natives of Brabant, and ultra Catholic. They had been called by Sully, then prime minister and Surintendant des finances, to develop tapestry manufacturing in Paris in the hope that it would limit textile imports from the Low Countries.<sup>16</sup> Settled in Paris in the early seventeenth century, they quickly extended their activities to include the leather and grain trades.<sup>17</sup> In the Parisian notaries' archives, it appears that they were associated with Van Uffelen, who came from Antwerp, in various businesses.<sup>18</sup>

In 1585, his family had moved to Amsterdam, where they traded in copper and lead as well as in drapery. Their Russian trade flourished and two family members established themselves in Venice, where they acted as agents. Van Uffelen also participated in overseas trade by buying shares in the Dutch East India Company.<sup>19</sup> The family's integration into Amsterdam's merchant elite was strengthened when Jacomo van Uffelen married Maria van Erp in 1616. She was the daughter of a famous copper trader, Arent van Erp,<sup>20</sup> and the sister-in-law of Pieter Cornelisz Hooft, a major trader in herring, oil, and grains. Hooft was one of the first shareholders of the VOC and was many times mayor of Amsterdam.<sup>21</sup> Thus, from the beginning, the French land reclamations launched by Henri IV had involved members of the commercial elite of Amsterdam who had come originally from the Brabant region.

Those Flemish and Brabant capitalists were backed by the French aristocracy as early as 1605, thus providing a strong political network. Jean de Fourcy was the Surintendant des bâtiments du roi, in charge of the administration of the royal buildings, and a member of the Conseil d'État, an increasingly powerful instrument of central government.<sup>22</sup> Originally close to Sully, he became a "creature" of Richelieu as early as the 1610s. Antoine Ruzé d'Effiat was Jean de Fourcy's brother-in-law and became

15. *Edict du roy pour le dessèchement des Marais*.

16. Jules Guiffrey, *Histoire de la tapisserie depuis le Moyen Age jusqu'à nos jours* (Tours, 1886), pp. 294ff.

17. AN, MC, LI 21, 30 août 1608 (for the leather trade); MC, XVII 161, 28 avril 1615 (for Levant trade).

18. Eric Henk Wijnroks, *Handel tussen Rusland en de Nederlanden, 1560–1640* (Hilversum, 2003), pp. 244–260.

19. Johannes Gerard van Dillen, *Het oudste aandeelhoudersregister van de Kamer Amsterdam der Oost-Indische Compagnie* (The Hague, 1958), p. 211.

20. Johan Engelbert Elias, *De vroedschap van Amsterdam, 1578–1795*, 2 vols (Haarlem, 1903), I, p. 60.

21. *Ibid.*; Van Dillen, *Het oudste aandeelhoudersregister*, pp. 71 and 200.

22. Louis Battiffol, "Les travaux du Louvre sous Henri IV d'après de nouveaux documents", *Gazette des Beaux-Arts* (1912), p. 178; Bernard Barbiche, "Henri IV et la surintendance des bâtiments", *Bulletin monumental*, 142 (1984), pp. 19–39.

Surintendant des finances in 1625.<sup>23</sup> Nicolas de Harlay was a former Intendant des bâtiments du roi and a former ambassador of Henri III and Henri IV. Until 1639, the association remained stable, despite the deaths of Jean de Fourcy in 1625 and Antoine Ruzé d'Effiat in 1631. For instance, in 1634, Henry de Fourcy, son of Jean, and Luca van Uffelen, son of Hieronimus, were still involved in a joint business to export grain to Malta.<sup>24</sup> Furthermore, the owners of French-drained lands used the network of Dutch merchants to sell the produce from their new properties at favourable prices.

For more than thirty years, the draining of the French marshes relied on the association of three different groups: French aristocrats and financiers, foreign capitalists, and the engineer Humphrey Bradley. The scheme worked effectively because of the shared interests of French financiers and capitalists and merchants from the southern Netherlands. In that context, no fewer than eight different sites were drained: Bordeaux and Lesparre in Guyenne, Tonnay-Charente in Saintonge, Sarliève in Auvergne, Capestang in Languedoc, the Marais Vernier in the Seine estuary, and the swamps of Sacy-le-Grand in Picardy.

The organization of the drainage work was continued at the end of the 1630s, even though by then several of the main investors had died. As early as 1640, Johan Hoefufft (1578–1651) and Barthélémy Hervart (1606–1676) began their participation in these projects. Hervart was a German banker from Augsburg,<sup>25</sup> where his family had been established for a long time, ever since his grandfather had joined Jacob Fugger.<sup>26</sup> Hervart started his career at the court of Weimar, taking charge of the treasury. During the 1630s, he played the role of go-between with France. Richelieu chose him as middle-man to pay the mercenaries of the Duke of Weimar.<sup>27</sup> During the 1640s, he served Mazarin with the same loyalty as he had served Richelieu. He was also one of the main partners of Thomas Cantarini, Pierre Serantoni, and Vincent Cenami, who were bankers and associates of Mazarin.<sup>28</sup> Thanks to his loyalty, Hervart became a key figure in French finances and was made Surintendant des

23. Françoise Bayard, Joël Félix, and Philippe Hamon, *Dictionnaire des surintendants et contrôleurs généraux des finances: du XVII<sup>e</sup> siècle à la Révolution française de 1789* (Paris, 2000), pp. 60–63.

24. AN, MC, XIX 406, 19 mars 1634; MC XIX 407, 30 avril 1634.

25. Claude Dulong, *Mazarin et l'argent. Banquiers et prête-noms* (Paris, 2002), pp. 263–335; Georges Depping, "Un banquier protestant en France au XVII<sup>e</sup> siècle, Barthélémy Herwarth, contrôleur général des finances (1606–1676)", *Revue historique*, 10 (1879), pp. 285–338, and 11 (1879), pp. 63–80.

26. Léon Schick, *Un grand homme d'affaires au début du XVI<sup>e</sup> siècle. Jacob Fugger* (Paris, 1957), pp. 60–63.

27. Claude Badalo-Dulong, *Banquier du roi, Barthélémy Hervart 1606–1676* (Paris, 1951).

28. Dulong, *Mazarin et l'argent*, pp. 12ff., 149–212.

finances in 1655.<sup>29</sup> He must have met Johan Hoeffft in Weimar, where Hoeffft was also employed by Richelieu to supply the army.

Hoeffft was a merchant from Roermond, or Guelders, in the modern-day Dutch province of Limburg.<sup>30</sup> After travelling with his family, he moved to France and settled in Rouen (Normandy) in 1600, and received a *lettre de naturalité* the following year.<sup>31</sup> Whereas the Comans brothers came to Paris as Catholics, Hoeffft was a Protestant and so was an example of a Protestant migrant from the Low Countries. Hoeffft had experienced a steady rise in international trade ever since his arrival in France. During the first two decades of the century, he developed his business mainly by means of Atlantic trade.<sup>32</sup> Based in Rouen, he acted as an intermediary between the United Provinces and Spain. After 1609, in a peaceful period, he began to trade directly with Spain. The notaries' archives of Rouen reveal that Hoeffft was an active shipowner exporting French grains to Italy.<sup>33</sup> He quickly became used to working with the Dutch East India Company, to which he supplied ships and sold materials to construct them,<sup>34</sup> and built strong links with Protestant merchants in the Atlantic region.

Until 1630, his main speciality was the trading of metal goods, weapons, and vessels.<sup>35</sup> Probably, he was close to Van Uffelen, and was thus informed about land reclamation. While continuing his former business, he took great interest in the development of the French financial system. Since 1624 the French monarchy had been fighting the Spanish Crown by financing the troops of Bernard of Saxe-Weimar, among others. Thanks to his family in Amsterdam, Hoeffft was placed in charge of building a link between France and the Weimar court. In compensation for his services, Hoeffft was granted a number of tax farms,<sup>36</sup> which meant that he could collect different taxes to reimburse his advances to the French monarchy.

29. Daniel Dessert, *Argent, pouvoir et société au Grand Siècle* (Paris, 1984).

30. Jacques Bottin and Pierre Jeannin, "Entre conviction et réalisme: deux hommes d'affaires protestants du premier XVIIe siècle", in Guy Martinière, Didier Poton, and François Souty (eds), *D'un rivoage à l'autre, ville et protestantisme dans l'aire atlantique (XVIe–XVIIe siècles)* (Paris, 1999), pp. 157–171.

31. Archives Départementales, Seine-Maritime, C 1260.

32. Bottin and Jeannin, "Entre conviction et réalisme", pp. 160–161.

33. Jacques Bottin, "Négoce et crises frumentaires: Rouen et ses marchands dans le commerce international des blés, milieu XVIIe – début XVIIIe siècle", *Revue d'histoire moderne et contemporaine*, 45 (1998), p. 579. At the beginning of the seventeenth century Hoeffft possessed, in his own name, two ships of 160 and 200 tons.

34. Bottin and Jeannin, "Entre conviction et réalisme", pp. 160–161.

35. AN, MC, LXXIII 295; AN, MC, LXXIII 296, 25 janvier 1621.

36. To pay his debts, the King of France used to give his creditors the right to collect and keep the revenues of taxes, so that they could recover their money from taxpayers' contributions; AN, E 96 A, fo. 275; E 140 B, fo. 327; E 167, fo. 268; E 199 A, fo. 367. On this point see Françoise Bayard, *Le monde des financiers au XVIIe siècle* (Paris, 1988).

Hoeufft thus became an agent of Richelieu, who used Hoeufft's connections in Holland to raise funds on the Dutch money market.<sup>37</sup> In the next decade, Mazarin employed him in a similar way.<sup>38</sup> In the first half of the seventeenth century Hoeufft progressively became indispensable to the French monarchy.

In view of the enormous funds involved, it is clear that Hoeufft could not have succeeded alone. He belonged to one of the most powerful bourgeois families of the United Provinces. Hoeufft was a bachelor and had no children, but his nephews followed very successful careers. Two of them require some special attention. Johan Hoeufft junior was canon of the Utrecht diocese, and as a shareholder in the drainage work of Petit Poitou, he took the title of Lord of Fontaine-le-Comte and Choisival.<sup>39</sup> But that was not his main business, for he was also a director of the Dutch East India Company and closely involved in its overseas trade.<sup>40</sup> In 1638 he married Isabella Deutz, the daughter of Hans Deutz and Elisabeth Coijmans.<sup>41</sup> The marriage was the best proof of the perfect integration of the Hoeufft family into the world of international trade. Isabella Deutz was the granddaughter of Balthasar Coijmans, who had built his fortune in international trade and who was, in 1630, the second wealthiest man in Amsterdam.<sup>42</sup> Furthermore, Isabella's brother, Johan Deutz (1618–1673), made a brilliant career in Amsterdam, becoming in 1654 the director of trade with the Levant and obtaining in 1659 a monopoly of the mercury trade in northern Europe.<sup>43</sup>

The second nephew of Johan Hoeufft who participated in the construction of his social network was Diderick junior (1610–1688). He spent all his life in Dordrecht and died as Lord of Fontaine-Peureuse, a tribute to his involvement in the draining of the marshes of Sacy-le-Grand, near Compiègne, in Picardy.<sup>44</sup> Like that of his cousin, the social integration of Diderick can be established from his marriage. In 1641 he married Maria de Witt.<sup>45</sup> She was Jacob de Witt's daughter and sister of Johan de Witt, the political leader of the United Provinces from the 1650s until the 1670s.<sup>46</sup>

37. Archives des affaires étrangères, Paris, Correspondance politique, Hollande 17, no. 97.

38. "Abrégé du compte de la recette faite sous le nom de Monseigneur le Cardinal de Mazarin depuis 1641 jusques en l'année 1648", in Dulong, *Mazarin et l'argent*, pp. 241–243.

39. Elias, *De vroedschap*, II p. 633.

40. *Ibid.*

41. *Ibid.*

42. J.G. Frederiks and P.J. Frederiks, *Kobier van den tweehonderdsten penning voor Amsterdam en onderhoorige plaatsen over 1631* (Amsterdam, 1890), p. 69.

43. Elias, *De vroedschap*, II, p. 633.

44. *Ibid.*, p. 634.

45. Herbert H. Rowen, *John de Witt, Grand Pensionary of Holland, 1625–1672* (Princeton, NJ, 1978), p. 108.

46. *Idem*, *John de Witt: Statesman of the "True Freedom"* (Cambridge, 1986).



This then was the history of the drainage entrepreneurs of the Petit Poitou and Arles marshes. Furthermore, Johan Hoefufft participated in an international business network. His family and their business links with the greatest Dutch capitalist families gave him a solid financial base. Several of his relatives and allies were involved in overseas trade, one of the major pillars of Dutch economic growth in the seventeenth century.<sup>47</sup>

The drainage projects undertaken in France between 1599 and the middle of the seventeenth century were based on a collaboration between the French central government and a small group of capitalists and financiers whose main business was based in Amsterdam. Their economic and political powers reinforced each other in a social construction that continued for almost sixty years and resulted in a strong politico-economic network.

#### THE DRAINAGE WORKS: A SOCIO-POLITICAL ISSUE

Between 1599 and the 1640s, most of the French drainage projects were undertaken with the help of foreign investors. Thanks to the edicts of 1599 and 1607, they could easily expropriate property from its owners and simply throw out former users of the swamps who did not want to sell their lands or cooperate in the drainage work. Admittedly, they also imported new ways of growing wheat and raising cattle. In that way, the globalization of the economy had consequences on a local scale, even though the drained swamps were very far from the economic core. The cases of Arles and Petit Poitou will clarify the nature of the social disruption caused by the drainage.

The most famous marshes drained in France during the seventeenth century were those of Petit Poitou.<sup>48</sup> During the twelfth and thirteenth centuries, the Cistercian monks of the area had already conducted an important drainage operation and had constructed the hydraulic infrastructures of the swamps.<sup>49</sup> Progressively, that equipment fell into disrepair, especially during the Wars of Religion, when Poitou became a region much disputed between Catholics and Protestants.<sup>50</sup> As a consequence, between the middle of the sixteenth century and the 1640s the swamps were left derelict. The marshes had started to lure investors at the

47. De Vries and Van der Woude, *The First Modern Economy*, pp. 377–408; J.L. van Zanden, *The Rise and Decline of Holland's Economy: Merchant Capitalism and the Labour Market* (Manchester, 1993), pp. 35–41.

48. Yannis Suire, *Le Marais poitevin. Une écohistorie du XVIe à l'aube du XXIe siècle* (La Roche-sur-Yon, 2006).

49. Jean-Luc Sarrazin, "Les Cisterciens et la genèse du marais poitevin (France), (vers 1180–vers 1250)", in Léon Pressouyre and Paul Benoit (eds), *L'hydraulique monastique. Milieux, réseaux, usages* (Grâne, 1996), pp. 111–117.

50. Suire, *Le Marais poitevin*, pp. 23–28.



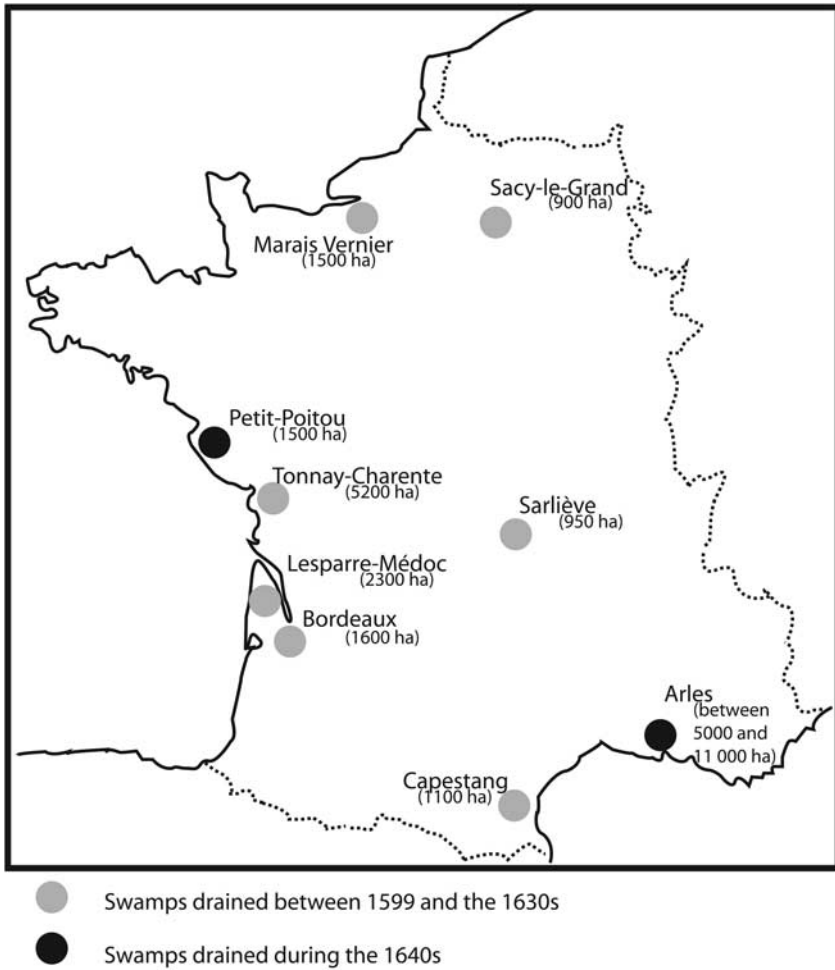


Figure 1. Land reclamation in France between 1599 and the 1630s.

beginning of the 1640s, by which time the drainage programme of Tonnay-Charente, located in Saintonge, a few kilometres to the south of Petit Poitou and near the city of La Rochelle, had begun to prove its profitability (see Figure 2).<sup>51</sup>

The merit of that work has been attributed to the Dutch for a long time, but the manner of their intervention was unclear. Recently, Yannis Suire tried to show that the draining of Petit Poitou had been the work of local

51. Morera, “Les assèchements de marais XVIIe siècle”, pp. 301–302.

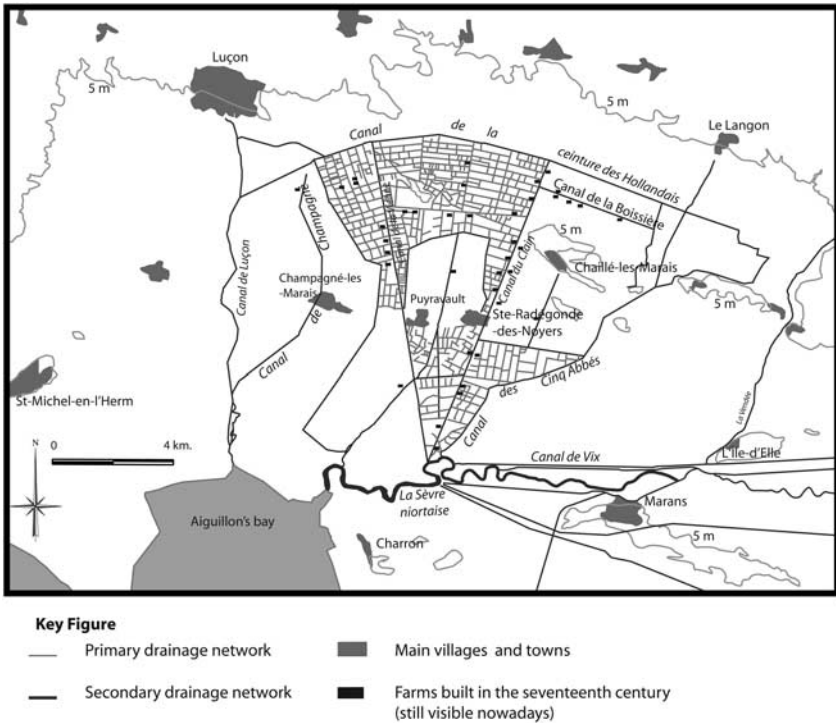


Figure 2. The drained swamps of Petit-Poitou.

Sources: Cartes IGN au 1/50 000 1327, 1328, 1427 et 1428 and Pierre Siette, Plan et description particulière des marais desséchés du Petit Poitou (1648).

investors only.<sup>52</sup> It is probable that the local aristocracy did play a key role. In 1641, an entitlement to drain the Petit Poitou swamp was granted to Pierre Siette, an engineer and cartographer to the king, and a representative of the Duke Antoine de Gramont and the Prince de Condé.<sup>53</sup> Alongside those two investors, it is also useful to mention Julius de Loynes, Richelieu's personal secretary.<sup>54</sup> So, to that extent, the reclamation of the Petit Poitou marshland was under aristocratic control, and certainly Richelieu and then Mazarin guided operations.

52. Suire, *Le Marais poitevin*, pp. 56ff.

53. *Declaration du roy, contenant la continuation des privilèges accordez pour le dessechement des marais des provinces de Poictou, Xaintonge & Aulnis* (Paris, 1641); Pierre Siette was actually a frontman for Antoine de Gramont: *Privileges pour les marais des paroisses de Parampuiere, Ludon et Blanquefort en Guyenne* (Paris, 1649), p. 5; *Arrêt du conseil privé ... portant que la dixme des fruicts qui se levent sur le sterres cy-devant en marais, à présent desseichées et mises en culture dans l'estendue de la paroisse de Saint Bonnet sera payée à raison de vingt gerbes l'une* (Paris, 1651), p. 1.

54. Joseph Bergin, *Pouvoir et fortune de Richelieu* (Paris, 1987), pp. 59ff.; originally published as *Cardinal Richelieu: Power and the Pursuit of Wealth* (London, 1985).

Nevertheless, the archives, kept in Utrecht, of the Society for the Draining of Petit Poitou show that these local contractors depended on Dutch investors.<sup>55</sup> Octavio de Strada, who monitored the work for Hoeufft, wrote two notebooks which list the expenditure of Johan Hoeufft in Petit Poitou between 1642 and 1651, the year of his death. During that decade Hoeufft invested 168,135 livres tournois (lt.) in his own name in Petit Poitou. In the meantime, he also lent 622,000 lt. to the main associates in the drainage work, and 200,146 lt. to his own representative in the region, Octavio de Strada.<sup>56</sup> The Utrecht books show that Johan Hoeufft provided all the money required, enabling the local aristocracy to take control of the region by granting them generous loans and indirectly strengthening support for the monarchy in the region. The land reclamation work therefore affected the agrarian balance and the structure of land ownership.

Almost nothing is known about the exploitation of the Petit Poitou swamps just before their reclamation, and even demographic and economic studies are lacking. Nevertheless, some information can be drawn from de Strada's notebooks. First, it is important to note that the land reclamation was a very hierarchical enterprise.<sup>57</sup> De Strada settled two farmers in the *polder* in order to conduct and survey the work. During the 1640s the work faced no judicial opposition nor were there riots against their installation. On the one hand, such a silence can be explained by political support for the operation, as the main aristocrats of the region were themselves involved in the land reclamation. Furthermore, the monasteries of the area were too weak to take any action.

On the other hand, there were the demographics of the region. Indeed, it is striking that de Strada's notebooks mention – several times – workers coming from Auvergne or Holland.<sup>58</sup> That indicates that the drainage entrepreneurs could not find the labour force they needed in Poitou alone and that they had to import them from more remote regions. In other words, the lack of opposition could certainly be explained by the demographic weakness of Poitou and the consequent abandonment of the swamps, which allowed for a reinforcement of the aristocracy's economic dominance. It is all the more interesting to compare the case of Poitou with the project at Arles in lower Provence, where the demographic trend was the opposite.

In association with Barthélémy Hervart, Johan Hoeufft also superintended important works in the Rhone delta.<sup>59</sup> Operations began there in 1642, the same year as in Petit Poitou, and the pattern of the enterprise

55. Rijksarchief Utrecht, Huis Zuilen [hereafter, RUHZ], 691 and 692.

56. RUHZ, 692, fo. 187v.

57. Morera, "Les assèchements de marais XVIIe siècle", pp. 338–366.

58. RUHZ, 692 fo. 684r.

59. Dienne, *Histoire du dessèchement*, p. 289; Morera, "Les assèchements de marais XVIIe siècle", pp. 353–356.

was the same.<sup>60</sup> Hoeufft did not settle in Provence, so he had to entrust an employee with overseeing the business. He chose Jan van Ens, whose uncle was involved both in land reclamation in Picardy, and in French finances.<sup>61</sup> Van Ens managed the work from 1642 until his death in 1653. Because of the conflicts he had to face, Octavio de Strada joined him in 1648.<sup>62</sup>

Like the swamps of Petit Poitou, the marshes of Arles had been drained since the Middle Ages,<sup>63</sup> and their infrastructure too suffered similarly from the social disruption at the end of the sixteenth century, which lasted – in Provence – until 1629.<sup>64</sup> Despite the similarities, however, the social context in which the work took place was deeply different. First, Hoeufft, Hervart, and their associates did not finance aristocratic support and so intervened in their own names. So, in accordance with the Edict of 1599, after draining the swamp they jointly owned two-thirds of the land as soon as the work was completed, between 1645 and 1646.<sup>65</sup> As a consequence, they controlled a huge part of the territory of Arles and thus caused a local agrarian revolution by dispossessing members of the local elite.<sup>66</sup>

To carry on this land allocation, all the Arlesian countryside was surveyed in order to ascertain which parcels of land would be given to Van Ens. That work was entrusted to Jean Pellissier, an Arlesian surveyor, and Johan Voortcamp, a Dutch cartographer who had come especially to assist in the drainage work.<sup>67</sup> Their mission was concluded by the publication of two reports giving the names and titles of all the former landowners of the swamps, including the quantity and quality of the lands they possessed. Thanks to that document, it is still possible to understand how Hoeufft's investments completely changed the relationship between Arles and its countryside.<sup>68</sup>

60. Bibliothèque Municipale d'Arles [hereafter, BMA], Fonds Véran, no. 493.

61. Archives Départementales, Oise, H 1698, pièce nos 11 and 12.

62. AN, MC, CXXII 445, 5 juillet 1648.

63. Louis Stouff, "La lutte contre les eaux dans les pays du bas Rhône, XIIe–XVe siècles. L'exemple du pays d'Arles", *Méditerranée*, 3–4, (1993), pp. 57–68; Emeline Roucaute, "Gestion et exploitation du marais arlésien au Moyen Âge", in Joëlle Burnouf and Philippe Leveau (eds), *Fleuves et marais, une histoire au croisement de la nature et de la culture* (Paris, 2004), pp. 245–251.

64. Jean-Maurice Rouquette *et al.*, *Arles, histoire, territoires et cultures* (Paris, 2008), pp. 479–494.

65. To pay the investors for the land reclamation, the Edict of 1599 required two-thirds of the drained lands be given to the entrepreneurs at the end of the reclamation work, with the other third being for the former landowners.

66. Archives municipales d'Arles [hereafter, AMA], DD 85, fo. 39 and ff.

67. Archives Départementales des Bouches-du-Rhône, B 3344.

68. "Rapports de déséparation des terrains desséchés pour prix du contrat du 16 juillet 1642, des 14 août 1645 et 30 avril 1646", *Délibération de l'association du dessèchement des marais d'Arles qui adopte le projet tendant à rendre le canal d'Arles à Bouc utile au dessèchement du 5 mars 1827* [hereafter, DAD], (Arles, 1827), pp. 62–88.

First, the two surveyors clearly distinguished two kinds of land. The *coustières* were the most elevated and the driest lands. Even though they were improved by the work, that part of the country was not involved in the redistribution. The *coustières* comprised 840 hectares over a total surface of 5,824 hectares. In contrast, the *paluds* were the lowest and the wettest part of the country. The entire property switch allowed by Van Ens's work has been calculated for this part of the territory at 4,978 hectares.

The survey reports by Voortcamp and Pellissier allow comparison of the re-apportionment of property before and after the drainage work, and thus enable us to understand the significance of the social consequences of the work. Concerning the situation before the land was drained, two types of information should be taken into account. The surveying of the *paluds* clearly shows that the area was highly fragmented, since the 4,973 hectares were split into 114 parcels. The division was so thorough that 56 parcels were smaller than 10 hectares. On the other hand, it is relevant to underline that almost half of the *paluds* were divided into only 9 parcels.

Such an extreme division might explain why the reclamation could have been led only by a foreigner supported by the Crown. Indeed, the ownership of the land surrounding Arles was so split up that it was too difficult to reach any agreeable compromise among the landowners. Furthermore, the survey demonstrates that a large part of the Arlesian population was interested in exploiting the marshes, as 46 per cent of the land and 23 per cent of the parcels belonged to nobles, whereas a large part was in the hands of unidentified individuals – probably commoners of some sort (see Tables 1 and 2). Thus the Arlesian aristocracy was by far the strongest landowner in the marshes.

In accordance with the Edict of 1599, two-thirds of the total land reclaimed was given to Van Ens; he therefore took possession of 3,316 hectares of land. The reclamation thus caused a huge change in the character of land ownership, involving all groups and classes. Nevertheless, the small landowners may have been the main victims of his work since their parts of the marshes were reduced to tiny parcels.

Van Ens could thus dominate the entire Arlesian countryside. He took his two-thirds share in each parcel, so that his property was divided into 114 different parts. This seemed to be a weakness at first sight, but it actually reinforced his work, none of the landowners being effective enough to propose alternative ways of managing the water. So, four years after his arrival in Provence, Hoeyff and his associates became the most important landowners in the Arlesian area and transformed the traditional partition of landed property.

The new ownership of the territory drastically changed the social balance of the town.<sup>69</sup> On the one hand, supporters of the growth of royal

69. Morera, "Les assèchements de marais XVIIe siècle", pp. 371ff.

Table 1. *Property distribution before drainage work carried out by Van Ens (1645–1646)*

Types of landlord	Size of parcels (in hectares)								Total
	A	B	C	D	E	F	G	H	
Nobles	4		53	44	114	804	375	886	2280
Bourgeois	11	4	60			88	401	540	1104
Church	2	5	9		126	80		469	691
Undefined individuals	44	27	32	90	68	180			441
King's lieutenant								349	349
Lawyers	7	17		54	30				108
Total	68	53	154	188	338	1152	776	2244	4973

Types of landlord	Number of parcels								Total
	A	B	C	D	E	F	G	H	
Undefined individuals	27	7	4	5	2	2			47
Nobles	3		6	3	3	7	2	2	26
Bourgeois	8	1	7			1	2	1	20
Lawyers	4	4		3	1				12
Church	1	1	1		3	1		1	8
King's lieutenant								1	1
Total	43	13	18	11	9	11	4	5	114

Key: A < 5 hectares; 5 ≤ B < 10 hectares; 10 ≤ C < 20 hectares; 20 ≤ D < 50 hectares; 50 ≤ E < 100 hectares; 100 ≤ F < 300 hectares; 300 ≤ G < 500 hectares; 500 hectares ≤ H.

Source: "Rapports de déséparation des terrains desséchés pour prix du contrat du 16 juillet 1642, des 14 août 1645 et 30 avril 1646", DAD, pp. 62–88.

power in Provence backed the operations, while adherents of the parliament of Provence, an institution that had traditionally rallied opposition to the king, launched a long-lasting struggle against the drainage entrepreneurs.<sup>70</sup> Attitudes to land reclamation were therefore determined by political divisions.<sup>71</sup> The main social consequences of the draining operations were connected to the political evolution of Provence.

The opposition to Van Ens's work strengthened ancient divisions. The struggle between the two parties took two different forms. First Hoeufft's

70. During the seventeenth century the process of extending the power of the central administration never ceased, and the king of France and his councils were constantly challenging various provincial and local rights and liberties. As representative and defender of the liberties of Provence, the parliament of Aix-en-Provence thus tried to undermine the growth of the king's power. This opposition culminated in the Fronde at the end of the 1640s and the beginning of the 1650s.

71. René Pillorget, *Les mouvements insurrectionnels en Provence entre 1596 et 1715* (Paris, 1975), pp. 528ff.; Rouquette et al., *Arles, histoire, territoires et cultures*, pp. 495–504.

Table 2. *Property distribution after drainage work carried out by Van Ens (1645–1646)*

Types of landlord	Size of parcels (in hectares)								Total
	A	B	C	D	E	F	G	H	
Van Ens	59	54	117	238	206	1613		1029	3316
Nobles	6	28	10	72	225	421			762
Bourgeois	26	13			29	314			382
Church	2	3	11	58		157			231
Undefined individuals	55	11	35	13	60				174
King's lieutenant						116			116
Lawyers	8	4	24						36
Total	156	113	197	381	520	2621		1029	5017

Types of landlord	Number of parcels								Total
	A	B	C	D	E	F	G	H	
Van Ens	49	14	16	13	5	14		3	114
Undefined individuals	35	3	5	1	2				46
Nobles	5	7	1	4	5	4			26
Bourgeois	12	4			1	3			20
Lawyers	8	1	3						12
Church	2	1	1	3		1			8
King's lieutenant						1			1
Total	111	30	26	21	13	23		3	227

*Key:* A = 5 hectares;  $5 \leq B < 10$  hectares;  $10 \leq C < 20$  hectares;  $20 \leq D < 50$  hectares;  $50 \leq E < 100$  hectares;  $100 \leq F < 300$  hectares;  $300 \leq G < 500$  hectares;  $500$  hectares  $\leq H$ .

*Source:* Table 1.

enterprise was undermined by riots and the destruction of the new infrastructure. Arlesian archives provide proof of outbreaks of violence, which also involved inhabitants of the nearby town of Tarascon (see Figure 3 overleaf). Located a few kilometres to the north of Arles, Tarascon could only release its flood waters onto Arles's territory. If the water flow were to be stopped, Tarascon's countryside would be condemned to remain under water. That is the reason why Arles's neighbours were so angry when, in 1647, a boat was sunk in a freshly dredged canal in order to make it flood into some recently seeded land owned by Van Ens and destroy the future harvest.<sup>72</sup> His opponents thus forced Van Ens to choose between his lands and those of Tarascon's inhabitants, and in the end the Tarascon mobilization compelled Van Ens to flood his own lands.

For its part, the chapter of Saint-Trophime, in the episcopal see of Arles, chose a different way to undermine Van Ens. The draining of a

72. AMA, DD 85, fos 134v–135r.



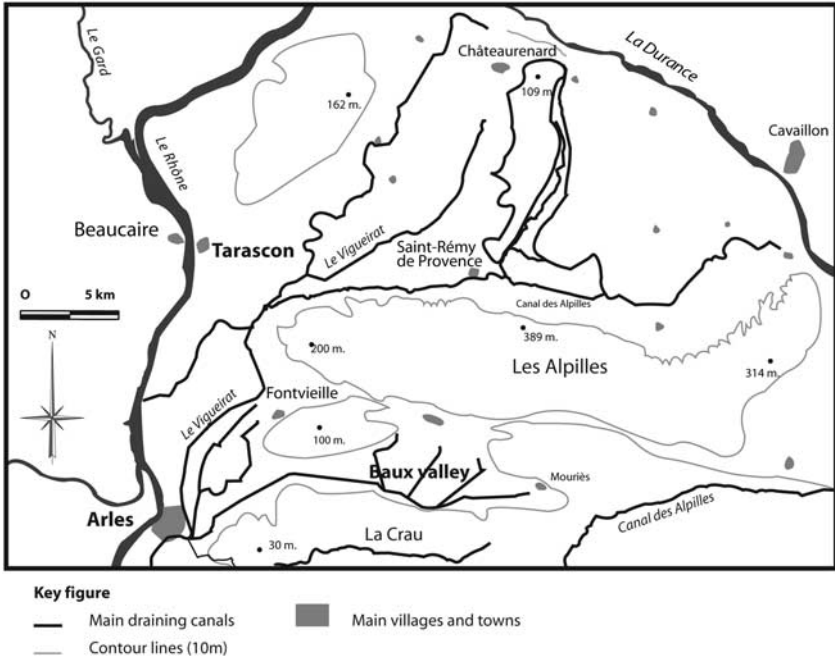


Figure 3. Tarascon's plain, the north of Arles territory and the Baux Valley.

Source: *Carte IGN TOP 100 066*.

large part of the Arles territories had actually involved a population move. The peasants of the Crau, a dry and infertile region located in the south-east of Arles's territory, came to settle in the new land. This shift had a heavy impact on the chapter's budget, which suddenly lost the revenues of the tithe usually paid by the peasants. Indeed, the drained lands were exempted from this clerical tax during the first twenty years of their exploitation.<sup>73</sup> In response to the change involved in land reclamation, the chapter launched legal proceedings to restore its right to the tithe on the new land.<sup>74</sup> After being heard in an ecclesiastical court, the dispute was finally settled by the Intendant of Provence, the representative of the king in the region, who imposed a compromise between the contractors and the chapter, and obliged Van Ens to pay a part of the tithe.<sup>75</sup>

To overcome those two kinds of opposition, the entrepreneurs had to seek the permanent backing of the central government, and without the intervention of the Queen Regent and her prime minister, Mazarin, they

73. BMA, no. 873 vol. XI, fos 403v–404v.

74. BMA, no. 873 vol. XI, fo. 351.

75. AMA, DD 85, fos 160r–160v.

would not have been able to defeat their opponents.<sup>76</sup> It is thus all the more significant to note that Hoeffft and his associates succeeded. Despite the difficulties, he managed to make a lot of money from his exploitation of the new land. In fact, the major social consequence of the land reclamation concerned the social structure of the city of Arles.

Intrinsically bound to the growth of centralized power, the success of the drainage work went hand in hand with the marginalization of the supporters of the Provençal parliament's authority. In short, Hoeffft's investment was used by the monarchy as a means to transform the social structure of Arles. From that point of view, the cases of Petit Poitou and Arles are very different. Indeed, in Poitou the monarchy's authority faced no opposition. Another difference lay in the impact on the local populations.

From north to south, the economic trend of the seventeenth century in France was very different. Since the work of René Baehrel, it has been firmly established that southern France was marked by both economic and demographic growth, while the situation of northern France was less favourable.<sup>77</sup> Before its draining in the 1640s, Arles's swamps were used intensively, as is revealed in the several trials launched against the entrepreneurs. A summons addressed to Van Ens by Antoine Garnon, an Arlesian fisherman, revealed that the Dutch engineer had filled in his canal in order to modify the hydraulic network.<sup>78</sup> Thus, the land reclamation deprived this fisherman of his main source of revenue.

The initial contract signed in 1642 gave Van Ens ownership of the whole hydraulic structure so that he could take possession of all the fisheries settled in the swamps, including the ownership of the new levées and plantings. Thanks to those rights he was able to exploit the trees and mustard that grew on the dykes. Indeed, mustard plants contributed to consolidate the dykes and offered a convenient income to the landowner. In 1647 Truchenu, an Arlesian noble who had been accustomed to exploit it before Van Ens's work, launched an action against him because Van Ens had confiscated the mustard harvest.<sup>79</sup> As the new owner of the whole hydraulic network, Van Ens also collected taxes on the navigation on his canals. The quarries of Fontvieille, which used to sell their stones in Arles, were thus among the firm opponents of the drainage work.<sup>80</sup> These examples illustrate the fact that the land reclamation had a deep impact in all layers of Arlesian society.

76. "Lettre close de la Reine mère sur les canaux creusés par J. van Ens, du 6 octobre 1648", DAD, p. 116.

77. René Baehrel, *Une croissance: la Basse-Provence rurale de la fin du seizième siècle à 1789* (Paris, 1961).

78. AMA, DD 85, fos 57ff.

79. AMA, DD 85, fos 180ff.

80. AMA, DD 87, fo. 165r.

Thus, both Petit Poitou and Arles demonstrate its strong societal impact. In Poitou, as in Provence, the drainage work was used to strengthen the power of the French monarchy and the local implantation of its loyal aristocracy. The Crown employed the funds, the skills, and the commercial networks of the Dutch traders to extend its power throughout the whole kingdom, while its aristocracy used them to exploit their wetlands. At the same time, land reclamation was linked to the dispossession of the local peasantry. And, as we shall see, the policy also had a deep impact on the environment of the wetlands.

#### ENVIRONMENTAL CONSEQUENCES OF LAND RECLAMATION IN ARLES AND PETIT POITOU

To measure the environmental impact of the work undertaken in the seventeenth century, historians need a long-term analysis. The modern draining of Arles and Petit Poitou affected areas equipped and exploited since the Middle Ages and gave them the shape they have today. In both regions, capitalist operations led by Johan Hoeufft caused lasting environmental changes. Nevertheless, those changes progressed differently in Poitou and Provence.

The swamp of Petit Poitou is located in the bay of the Aiguillon and is the result of tidal sediment.<sup>81</sup> Despite its geological origins it had not been subject to flooding from the sea for a long time, but it was regularly flooded by the waters of the Lay and Vendée, coastal rivers flowing into the Aiguillon bay. The main purpose of the drainage projects was therefore to divert that water into the sea as quickly as possible. The modern entrepreneur was helped by the intensive work completed in the area by Cistercian monks, who had already begun to drain the area during the twelfth and thirteenth centuries.<sup>82</sup>

When he arrived in Poitou to manage the land reclamation, de Strada found former canals still visible in the landscape, even though they were filled in with sediment. The task then was to renew the old infrastructure. He dredged the pre-existing canals and built new sluices, using local and foreign labour to do so. Thus, de Strada used workers from Auvergne, where he had settled, and imported Dutch cows and materials, including timber and bricks from Amsterdam and Hamburg.<sup>83</sup> Within a few years, he had succeeded in converting an unexploited swamp into arable and grazing land from which grain was exported to Amsterdam.<sup>84</sup>

The draining of the Petit Poitou swamp provided Hoeufft and his associates with a good return on their investment, thanks to the sale of grain and interest paid by associates. Nevertheless, the operation was not

81. Fernand Verger, *Marais maritimes et estuaires du littoral français* (Paris, 2005), p. 158.

82. Sarrazin, "Les Cisterciens".

83. RUHZ, 691, p. 40.

84. RUHZ, 691, p. 129.

solely a short-term business. Indeed, at the beginning of the 1670s Johan Hoeffft's heirs still owned several farms in Petit Poitou. A notebook written between late 1670 and early 1671 shows that more than 20 years after the work had been completed Petit Poitou still provided an annual income of more than 7,264 lt.<sup>85</sup> Two-thirds of that income was derived from oats and one-third from the sale of horses and cows. In return, the owners had to invest 370 lt. a year for the maintenance of the *polder*, to clear the canals, and to maintain the buildings of the area.

So, in a normal year, the land of Petit Poitou could offer landowners an income of almost 7,000 lt. Later, during the eighteenth century, Hoeffft's heirs still possessed their farms in Petit Poitou and chose to sell them at a good profit.<sup>86</sup> Between 1734 and 1741 the 23 farms owned by Hoeffft's heirs were sold and the proceeds of 254,000 lt. were divided among the different branches of the family. This amount clearly shows that the lands drained in the middle of the seventeenth century were still valuable in the following century, indicating that they had been steadily maintained and could still provide good revenues. The drainage works undertaken by Hoeffft and his associates are, even today, characteristic features of the area: all the farms built by Hoeffft still exist, and the toponymy has remained the same (see Figure 1).<sup>87</sup> Moreover, the draining of Petit Poitou prompted a sort of drainage fever, with projects multiplying in nearby regions.<sup>88</sup> Entrepreneurs increasingly turned their attention to the sea, launching a continuous wave of land reclamation that completely altered the environment of Aiguillon's cove within 200 years.

That evolution must be compared with the case of Arles. Settled by the Romans in the first century CE, the city of Arles always had to deal with water problems.<sup>89</sup> It was actually impossible to develop agriculture without draining the territory and protecting it from the Rhone flood. Medieval Arlesians built contrivances specifically to achieve that aim, but by the beginning of the seventeenth century the mechanisms had become inadequate.<sup>90</sup> At that time, they had to face the little Ice Age too and the consequences of social disruption caused by the Wars of Religion.<sup>91</sup>

85. RUHZ, 698.

86. Rijksarchief Utrecht, familie Des Tombe, 1117.

87. This continuity clearly appears in a comparison between a map drawn in 1648 by Pierre Siette, a royal cartographer, and the current maps held by the Institut Géographique Nationale; Pierre Siette, *Plan et description particuliere des marais desseichés du petit Poitou avecq le partage sur icelluy* (1648).

88. Suire, *Le Marais poitevin*, pp. 154–159 and 188–203.

89. Philippe Leveau, "Drainages et colonisation militaire en basse Provence rhodanienne", G. Fabre (ed.), *Organisation des espaces antiques: entre nature et histoire* (Biarritz, 2000), pp. 167–188.

90. Stouff, "La lutte contre les eaux".

91. Emmanuel Le Roy Ladurie, *Histoire humaine et comparée du climat. Canicules et glaciers XIIIe–XVIIIe siècles* (Paris, 2004), pp. 254–263 and 293–315.



Figure 4. Farms of Choisival in the Petit Poitou's swamps. The two barns on the right were built in the 1640s, though they have been restored. The main part of the farms built by Hoeuftt has similar barns.

*Photograph by the author.*

As in Petit Poitou, Hoeuftt and his associates dealt with a damaged, but previously developed countryside. Despite the need for new land, Arlesians had neither been able to build a consensus to drain their area, nor to negotiate with other towns of the region to regulate floodwater. Against that background, the mission of Van Ens appears in a different light. He had to change the way the water was managed and renew the old infrastructures. That became feasible as he concentrated all the canals and two-thirds of the land into his own hands.<sup>92</sup> By becoming the most important landowner in the region, he could easily lead the restoration of the former drainage system, and then complete it by digging new canals. Along with his restoration work, Van Ens also constructed a complex system to separate waters according to their origins.<sup>93</sup> Thanks to this system, water from the Baux valley was separated from that coming from Tarascon, and its management was simplified.

As in Poitou, Hoeuftt's enterprise led to a crucial environmental change in the Arlesian countryside which still strongly marks the area. Whereas the

92. Morera, "Les assèchements de marais XVIIe siècle", pp. 520–523.

93. *Ibid.*, pp. 504–520; BMA, Fonds Véran, no. 493, "Rapport du sieur Bernardy ingénieur, du 29 avril 1733".

draining of Petit Poitou was small-scale compared to all the regional wetlands, the work of Van Ens directly involved the whole left bank of the Rhone from the northern limit of Arles's territory to the Mediterranean Sea (an area of 110 square kilometres). The land reclamation of the 1640s covered all the arable land in the area.

Despite some floods, notably in the 1670s, Van Ens's constructions seem to have remained effective until the mid-eighteenth century.<sup>94</sup> In 1706, a catastrophic flood severely damaged the area, but in 1707 an agreement between Arles and Tarascon allowed for repairs.<sup>95</sup> A few years later, in 1718, Maître Pierre Lenice, the director of the *polder*, a lawyer and member of the Paris parliament, and representative of Hoeyff's heirs, was forced to pay his share of the maintenance charges. The sum of 75,809 lt. had to be paid to the *corps des vidanges*,<sup>96</sup> money which was spent on necessary work to keep the swamps of Arles drained.<sup>97</sup> In 1734 and 1736, two rulings obliged entrepreneurs to dredge canals and renew bridges built within the land drained.<sup>98</sup> Again, Hoeyff's family interests were defended by Maître Pierre Lenice, representative of Hoeyff's heirs, and also by François Devese, Seigneur de Lalo des Pluches, who, as one of Hoeyff's heirs, took a personal interest in the land reclamation.<sup>99</sup>

It seems that reclamation in the Arles region suffered at the end of the eighteenth century, although as soon as the French Revolution began several projects sprang up to continue the work of Van Ens. In 1791, 1795, and in 1802, Arlesian citizens gathered to talk about the need to drain the marshes again.<sup>100</sup> They finally received the support of the French government, which agreed to supervise the work in 1807.<sup>101</sup> The work was then led by an engineer who continued to work in the vein of Van

94. Bibliothèque municipales d'Avignon, Ms. 2852.

95. "Transaction entre la ville d'Arles et celle de Tarascon sur les chaussées, le 2 mars 1707", DAD, pp. 219–236.

96. The *corps des vidanges* is an Arlesian institution tasked with maintaining the water infrastructure around Arles. Created in the middle of the sixteenth century, it never managed to do so.

97. "Transaction portant arrêté de compte entre les syndics de l'association des vidanges et les associés au dessèchement", DAD, pp. 241–250.

98. "Dispositif du jugement souverain de nosseigneurs les commissaires délégués par l'arrêt du conseil d'Etat du 8 juillet 1732, le 10 février 1734", DAD, pp. 280–290; "Transaction passée entre le corps des vidanges, les sieurs intéressés au dessèchement d'Arles et noble Jean-Baptiste Prosper Le Blanc, syndic de robe de la noblesse de Provence, le 6 août 1736", DAD, pp. 296–312.

99. "Transaction passée entre le corps des vidanges", p. 308.

100. "Assemblée juridique du 6 février 1791", DAD, pp. 328–332; "Assemblée juridique du 27 fructidor an 3", DAD, pp. 332–337; "Assemblée juridique du X floréal an X", DAD, pp. 347–356.

101. "Arrêté du préfet qui approuve la délibération du 15 mai 1806, le 24 février 1807", DAD, pp. 448–450.

Ens's projects.<sup>102</sup> For example, the engineers of the Ponts et Chaussées used the network and installations that had been renewed two centuries earlier. Their task was eased by the regular upkeep of the Van Ens installations, which remain the basic framework of modern water management in the low Rhone area.

In short, from technical and environmental viewpoints, both the Arles and Petit Poitou land reclamations were very similar. On the one hand, they both enjoyed a medieval inheritance of former drainage works so that the entrepreneurs could build upon former infrastructures, and each used similar means to reach their ends. Furthermore, the environmental impact of both projects was far-reaching. The infrastructure is still quite effective even today.

### CONCLUSION

Focusing on the two cases of Petit Poitou and Arles, I have argued that the whole process of land reclamation undertaken in France between 1599 and the 1650s relied on the involvement of foreign agents, who were employed by the French aristocracy. Most of the foreign agents came from the southern Low Countries and had established their business in Holland. The drainage works of seventeenth-century France benefited from the Dutch Revolt and the beginning of the Eighty Years' War. The role of the Comans brothers, Van Uffelen, and Hoeffft was decisive in the success of Henri IV's policy. They were allowed to invest directly in the land drained and to lend money to other investors. In fact they were used as agents of French royal power. For instance, Hoeffft provided Mazarin with people who were able to manage large drainage projects and market the produce of the new land created. In relation to their commercial connections in Amsterdam, Hoeffft, like Van Uffelen before him, relied on a strong business network.

That organization was the reason why the French monarchy gave its crucial backing to land reclamation. Senior French state officials were directly interested in the successful outcome of the drainage work. As a consequence of their interest, they used their official positions to suppress legal disputes that could have endangered it. Conversely, the drainage entrepreneurs helped the Crown, and the prime minister, to affirm their authority in the areas concerned. The draining of the Arlesian marshes thus accompanied the growth of royal power in Provence. The French monarchy used the economic power of Amsterdam to strengthen its own power over its provinces, while Dutch capitalists benefited financially from the adventure.

102. "Explication de la carte chorographique des ouvrages du dessèchement des marais d'Arles", DAD, pp. 450–470.



Such collusion between the economic and political powers upset the social balance built by the communities surrounding the different wetlands. Indeed, the draining of the marshes meant appropriation of land by the investors and thus expulsion of former users. In Arles, some fisheries were destroyed, while Hoeufft and his associates took possession of others. Moreover, land drainage involved different kinds of migration. In Arles, Van Ens had to ease the movements of peasants coming from the Crau, which was a small-scale migration. But in Petit Poitou the drainage work was made possible thanks to workers coming from the Auvergne. To sum up, the draining of the French wetlands weakened the local population by curtailing their rights whereas it reinforced the local bourgeoisie and aristocracy, who accepted the growth of royal power.

In that sense, it is interesting to consider the social conditions of their success. In both cases, Hoeufft built hierarchical companies which dealt with the territory as a whole. Van Ens succeeded because he was the sole owner of the canals and because he possessed two-thirds of the area. De Strada and Hoeufft employed exactly the same method in Petit Poitou. The similarity between the statutes of the Arles swamp and those of Petit Poitou supports these findings.<sup>103</sup> The social changes were all the more striking as they left deep marks on the environment. The infrastructure they built, or rebuilt, is still in use today. More than technical skills, the Dutch imported a certain way of exploiting the swamps, which remained undisputed until the end of the twentieth century, when the rise of a new “green consciousness” started to question their achievements again.

103. “Les statuts du petit poitou du 19 octobre 1646”, *Recueil de reglements concernant les dessechement des marais* (Paris, 1703), pp. 62–67; BMA, no. 393, “Reglemens et statuts faicts entre Messieurs les Associez au dessechement des Paluds & Marais du Terroir de la Ville d’Arles & les Baux” (Arles, 1653).