

Profits and risks in drainage projects in Staats-Vlaanderen, c. 1590-1665

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Between 1590 and 1665 more than 100,000 hectares of marshes and lakes were drained in the Dutch Republic. Little is known about the way the costly and risky drainage projects were financed. This article aims to give more insight into the motives of the mostly urban investors and the ways they tried to limit risks. Furthermore, it draws attention to the important role the Dutch 'state' played by providing the investors with an efficient legal framework and by granting them generous tax exemptions. The article focuses on Staats-Vlaanderen, a frontier area in the South-West of the Netherlands, where almost 40,000 hectares of marshes were drained during this period.

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Introduction

The period 1590-1665 was the heyday of land reclamation in the coastal provinces of the Netherlands. During these 75 years more than 125,000 hectares of land were reclaimed.¹ This required a financial and logistic effort in land reclamation that was unprecedented and was not to be surpassed until the 20th century. About ten million guilders were invested in the draining of 26,000 hectares of lakes in North Holland between 1610 and 1640 alone (De Vries & Van der Woude 1997: 29). In 1972 Van der Woude voiced his surprise about the fact that hardly any attention had been given to the financial aspects of these large and risky enterprises (1972: 49). Studies about water management focused almost exclusively on legal and technical aspects. Only Baars dealt with the financing of drainage projects in his history of agriculture in the Beijerlanden area (1973). Nowadays, in the 'new water management history', the historiography of water management is no longer limited to technical and legal issues. Ecology and economy have become 'en vogue' among water management historians (Van Dam 2004). The financing of reclamation projects is also beginning to attract attention. For instance, a study of the financing of 'droogmakerijen' – drainage of lakes – in North Holland is in preparation (Van Zwet 2004). However, for the South-Western Netherlands (the marine clay area consisting of the South-Holland Islands, the North-West of Brabant and the province of Zeeland) only Baars' study

is available. Furthermore, his study covers only a small part of this area. So although most land embanked between 1590 and 1665 – some 78,000 hectares – was situated in this area, little is known about the way these reclamations were financed.

This article aims to deepen our knowledge of the financing of land reclamation in the South-Western Netherlands. It focuses on the legal and organisational framework enabling investors to engage in these risky operations and on the motives for investing in land reclamation. Were the investors short-term speculators or did they make a long-term investment, wishing to lease the reclaimed land to tenant farmers? Several authors suggest they mainly made long-term investments (Priester 1998: 34; Baars 1973: 20). Enthoven (1996: 345-6) even supposed the urban elite of Zeeland withdrew from trade and shipping in favour of agriculture. Investment in drainage was interpreted by him as the beginning of the aristocratisation of this group.

I will try to answer these questions by focusing on Staats-Vlaanderen (nowadays Zeeuws-Vlaanderen, or Zeeland-Flanders), a long, narrow region on the left bank of the Westerschelde River, controlled by the Dutch Republic in the 17th century. The investors are traced as much as possible and the question why they were prepared to spend large sums on reclamation is being dealt with. The subject is introduced with an overview of the geographic, economic and political state of Staats-Vlaanderen and the adjoining province of Zeeland at the beginning of the 17th century. Between 1590 and 1665 some 39,000 hectares of land were drained in this area; an estimation of the total costs involved yields an impression of the enormous effort in this regard. This will be followed by a section about the legal and organisational framework of the drainage projects. Then the article turns to the investors and their motives. The profitability of investing in drainage projects is calculated. A couple of case-studies highlights the motives of the investors.

Zeeland and Staats-Vlaanderen in the beginning of the 17th century

Zeeland emerged from the Dutch Revolt as one of the seven provinces of the Dutch Republic. The major towns of the four (later six) islands of the Zeeland archipelago had six out of seven votes in the provincial government, the 'Staten'. This meant that, like in Holland, political power was in the hands of the urban elite. This elite, mainly consisting of merchants, had experienced a Golden Age in the 16th century. Around 1600, however, the Zeeland economy stagnated. Trade and shipping experienced setbacks because of the

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replacement of Antwerp by Amsterdam as the main trade centre. On top of that, lucrative privateering came to a stop because of the Twelve Years' Truce with Spain in 1609 (Enthoven 1996: 228-30). Towns were still prospering, but opportunities to invest in trade and shipping had diminished, so investors looked for other opportunities.



Figure 1. Map of Zeeland in the 19th century. Staats-Vlaanderen is the area south of the River Westerschelde. Since 1814 it forms part of the province of Zeeland, but in the 17th century it was directly ruled by the States-General. Source: Zeeland Archives, Zeeuws Genootschap, Zelandia Illustrata I, 147.

One sector of the Zeeland economy was booming: agriculture. This sector flourished in the first half of the 17th century because of an increasing demand from the prospering towns in Holland and Zeeland. Zeeland had a highly developed, mainly arable agricultural sector, specialised in the growing of wheat and industrial crops like madder, rape seed and flax (Priester 1998). Drainage of marshes was considered to be one of the most lucrative ways to invest in agriculture. Some authors even claimed that the revenue of one harvest of rape from the new land was sufficient to reimburse the investment (De Hullu s.a.: 18). Thus it was not surprising that urban investors turned to drainage projects. Several reclamation projects were executed on the islands of Noord- and Zuid-Beveland, but the best opportunities were offered on the other side of the Westerschelde River, in Staats-Vlaanderen.

While Zeeland was flourishing, Staats-Vlaanderen experienced c. 1600 the darkest period in its history. After a century of devastating floods and warfare the region was depopulated and some 85 percent of its land area was flooded (Priester 1998: 31; De Kraker 2002: 33-6). The flooded land had been exposed to the sea for decades, which had one positive effect: the tides had deposited a thick layer of very fertile marine clay. Staats-Vlaanderen offered opportunities to reclaim large areas of highly valuable land. Since the region was depopulated and the few remaining inhabitants were impoverished, investors from Zeeland were welcome (Van Cruyningen 2000: 17-22). There was one complication: Staats-Vlaanderen, the part of the county of Flanders conquered by the Dutch Republic, was a so-called 'generaliteitsland', regarded as occupied territory, resorting directly under the rule of the States-General. As a result the permission to reclaim land had to be granted by the States-General and not by the government of Zeeland.

Circumstances seemed to be ideal for drainage in Staats-Vlaanderen. Fertile marshes existed and capital was available on the other side of the river. Some drawbacks were noted, however. Drainage was always risky, dikes could break and the new land flooded or the costs of the operation could be much higher than expected. In Staats-Vlaanderen additional risks existed. Until 1648 it was a frontier area, thus new polders could be flooded for military purposes or the land could be confiscated by the enemy. Indeed, after the end of the Twelve Years' Truce in 1621 many newly embanked polders were flooded by the military authorities.² Another problem concerned the ownership of the marshes. Elsewhere, submerged land reverted to the local or regional lord, from whom it could be purchased for drainage. In Staats-Vlaanderen, however, the rights of the former owners of land or tithes remained valid. These rights had to be purchased from the owners or their heirs, unless they wanted to partake in the project. After several decades of submersion there was often uncertainty about who owned what, sometimes leading to costly litigation.

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However, these setbacks did not deter Zeeland entrepreneurs from investing massively in drainage in Staats-Vlaanderen.

In the past some calculations of the reclaimed land area in the Netherlands have been published, but especially for Staats-Vlaanderen these data are not very reliable (Blink 1904: 112; Baars 1977). Priester's calculations are much more reliable (Priester 1998: 431-4 and 439-45), but they are in need of some corrections as a result of recent research. A new database of reclamations in Staats-Vlaanderen had to be constructed (see figure 2).

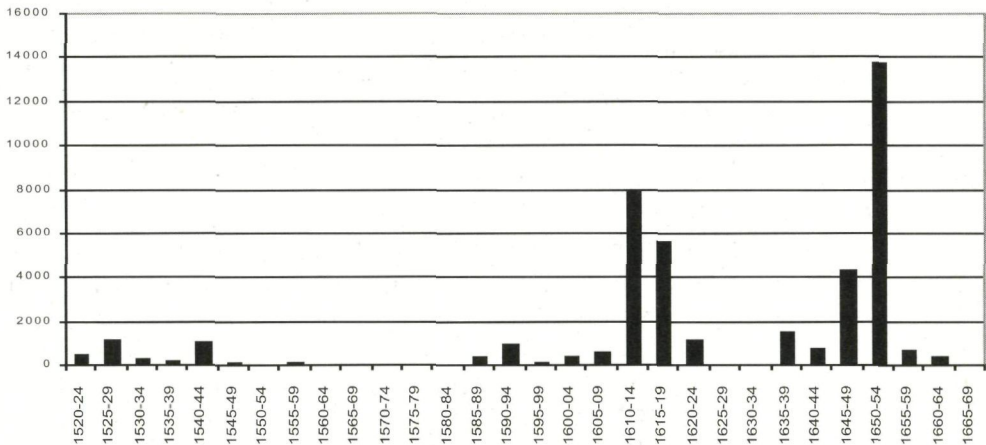


Figure 2. Drained area in Staats-Vlaanderen, 1529-1669 (in hectares). Source: De Kraker & Bouwens 2000; Priester 1998; Wilderom 1973; National Archives The Hague, Raad van State 2145; Zeeland Archives Middelburg, Handschriftenverzameling 1531.

Between 1590 and 1665 39,000 hectares of land were drained in Staats-Vlaanderen, which is half of the whole land area drained in the South-Western Netherlands in this period. Of these 39,000 hectares almost 33,000 were drained in only two decades, 1610-1619 and 1645-1654. These decades coincide with the Twelve Years' Truce and the first years following the Peace of Westphalia. Clearly, investors did not want to run the risk of military inundation or confiscation and waited until a truce or a peace treaty provided more safety guarantees. The enormous financial effort in these years completely dwarfs those of the previous period. During the first five years of the Twelve Years' Truce alone more land was embanked than in the whole 16th century.

After 1655, drainage activities slowed down and had become insignificant by the 1660s. It seems plausible to consider this as the result of the agricultural depression that had set in after the middle of the century, rendering investment in land less profitable. However, although rents of agricultural land decreased somewhat after 1650, rents in Zeeland remained at a fairly high level at least until 1670 and in parts of Staats-Vlaanderen even until the end of the century (Priester 1998: 654-5; Van Cruyningen 2000: 69). Other setbacks, like military inundations or natural floods occurred much later (1672 and 1682 respectively). The main reason for the stagnation of drainage projects after 1655 seems to be of an ecological nature. Marshes had to be silted up enough before they could be drained and by 1655 the stock of 'mature' marshes had been depleted. It would take several decades before new marshes had silted up, but by then the economic situation had become really adverse. Because of the depressed state of agriculture after 1700 rents and purchase prices of agricultural land collapsed, making drainage projects unprofitable. It would take until the second half of the 18th century before drainage became profitable again (Van Cruyningen 2000: 23, 65-72).

Although many accounts of drainage projects were lost, it was possible to calculate the costs of drainage of eleven polders in Staats-Vlaanderen from publications or from manuscript sources. The results are presented in the appendix. These eleven polders together cover an area of over 13,000 hectares or one third of the total area embanked in Staats-Vlaanderen in this period. Costs varied enormously, from about 100 to 300 guilders per hectare, depending mainly on the length of the dike in relation to the land area of the polder. Accidents could cause an enormous increase of costs. Beoostenblij-Benoordenpolder was expensive because the new dike broke shortly after its construction. On average, drainage projects in Staats-Vlaanderen did cost some 180 guilders per hectare. This sum covers the costs of the construction of dikes, sluices, canals, ditches and roads. Costs of drainage projects elsewhere in the South-Western Netherlands were of the same magnitude (Baars 1973: 46, 53, 61, 65; Walraven & Polderdijk 1896: 256-69; Welten 1993).

Compared to the 'droogmakerijen' in Holland, drainage projects in Staats-Vlaanderen were inexpensive. The draining of Schermer Lake in 1633 cost 460 guilders per hectare and several other projects were even more expensive (Van Zwet 2004: 220; Van der Woude 1972: 49). This difference was caused by the fact that draining of lakes was technically more complicated than drainage of marshes. It took a large number of costly windmills to pump redundant water out of the 'droogmakerij', whereas in the southwest a relatively simple sluice was sufficient to drain the polders, because they were situated above sea level.

Drainage of 39,000 hectares in Staats-Vlaanderen must have cost some 7 million guilders. Over the whole 75-year period almost 100,000 guilders were invested annually. In the period 1650-54 the yearly sum rose to at least 500,000 guilders. In fact, even more was invested, because the rights of former landowners and tithe holders had to be purchased and farms, labourer's cottages and other buildings had to be constructed. The sum of these other costs is unknown and they were not always paid for by the investors. Often tenant farmers and labourers paid for the construction of farm buildings and cottages. All in all, it does not seem unreasonable to suppose that 12-15 million guilders were invested in the period 1590-1665 (see Appendix). That is twice the starting capital of the Dutch East India Company (De Vries & Van der Woude 1997: 385). One of the reasons why people were prepared to invest such large sums was the fact that an institutional framework existed that limited the risks of drainage projects effectively.

'Octrooi' and 'Compagnie'

A drainage project required government permission, usually from the provincial government, but in the case of Staats-Vlaanderen permission was granted by the States-General. The procedure to acquire this so-called 'octrooi' was not a formality (Beekman 1905-1907: 1211-6). The States-General asked advice from several authorities about the technical feasibility of the project, about the consequences for neighbouring polders and towns, and about military and legal implications. Often, commissioners were sent to explore the area. The octrooi contained conditions to protect interests of older polders in the neighbourhood and prescribed how the polder had to be administered once drainage was completed. In the octrooi an attempt was made to balance the interests of the investors with those of their neighbours on the old land. This might lead to extra costs for the investors by obliging them to build an extra sluice or dig an extra canal, but it prevented also serious problems in the future.

In the case of Staats-Vlaanderen the octrooi also prescribed how the rights of landowners in flooded land had to be treated. The consortium that planned the drainage had to publish its plans in towns within and outside of the Republic. People with rights on land in the area had six to twelve months to make their claim known to the consortium. After that they had another six or twelve months to provide evidence to sustain their claim (Beekman 1905-1907: 1212). Then they could either participate in the drainage or sell their rights to the consortium. Since several marshes had been submerged for half a century or longer, many heirs of former owners never showed up and their 'vacant lands' became property of the drainage consortium.

Every octrooi granted the new polders exemption from property taxes, the length of the period varying from 3 to 27 years in relation to the expected costs of the project. In this way the public authorities stimulated land reclamation. Through the octrooi procedure, the Dutch Republic created a legal framework within which the operation could be completed efficiently. The intervention of the state was a decisive factor for the scale and the success of drainage projects in Staats-Vlaanderen and elsewhere in the Republic. Probably, the role of the state played was the result of the strong relations between merchants and political elites in the Republic. Several politicians, like 'raadpensionaris' Johan van Oldenbarnevelt, one of the highest dignitaries of the Republic, even invested in reclamations themselves (Baars 1973: 78; Blink 1904: 115-6; Welten 1993: 56; Teixeira de Mattos 1916-1952: X, 295-6).

How important this kind of government intervention was, can be shown by comparing the Dutch with the British practice. In 1626, King Charles I granted the Dutch engineer Cornelis Vermuyden permission to drain Hatfield Chase in South Yorkshire (Korthals Altes 1924: 229-34). The agreement between the King and Vermuyden contained no conditions about the rights of adjoining villages or the technical requirements for the project. No rules were stipulated for the collection of taxes necessary to maintain the dikes. The consequences were disastrous: technical mistakes, conflicts with villagers resulting in vandalism and costly litigation, and problems with collecting taxes resulting in a financial catastrophe for the group of predominantly Dutch investors (Korthals Altes 1924: 36-7, 56, 79). It has to be admitted that Vermuyden and the investors themselves added to the chaos, but the main problem was the fact that no legal framework existed in England that could have prevented most of these problems. In this respect the Dutch were far ahead.

Large drainage projects were too expensive to be financed by one person; a consortium of investors – a so-called 'compagnie' – had to be formed. Examples from North- and South-Holland show that these consortiums mostly consisted of small groups of men from the same town, complemented by friends or relatives from other towns (Baars 1973: appendices; Van Zwet 2004: 221-2). Networks of wealthy men – and a very small number of women – seem to have cooperated in several projects in changing combinations. The fact that these men knew each other well made it easy for them to cooperate in a costly and risky project. The same kind of networks operated in Staats-Vlaanderen. Take for example the drainage of Groede in 1613. The octrooi was granted to a group of nine men, two from The Hague, six from Middelburg and one from Brouwershaven.³ This last member was Cornelis Cats, brother of lawyer and future 'raadpensionaris' Jacob Cats, one of the Middelburg members of the group. The investors that embanked Nijs- en Hooglandpolder in 1610

were probably less homogeneous. The fifteen members came from Delft, Dordrecht, The Hague and Middelburg (De Kraker & Bauwens 2000: 234). Yet they had in common that they belonged to the dominant merchant and political elite and knew each other through their political and administrative activities.



*Jacob Cats, getekend door Adriaen van de Venne,
1618, naar de teekening by D. Franck D. Le Vesinck*

Figure 3. Jacob Cats (1577-1660), lawyer, poet, statesman and investor in drainage projects in Staats-Vlaanderen and England. Reproduction of a drawing by Adriaen van de Venne, 1618. Source: Zeeland Archives, Zeeuws Genootschap, Zelandia Illustrata IV, 508.

Participants in a drainage consortium took upon themselves an obligation to pay the costs of embankment of a part of the new polder. After completion they received a part of the embanked land in proportion to their share in the costs. The *compagnie* shows affinity with the 'partenrederij' (partnerships) practised in shipping. Like these partnerships shares could be inherited and participants could sell or mortgage their share, although sometimes permission was required from the other participants.⁴ People could also join the *compagnie* after it had already been formed. In that case permission from the other investors was required.⁵ The size of the shares was expressed in a certain area of land, usually 50, 100 or 200 'gemeten' (one 'gemet' is 0.44 hectare).

Yet some differences with shipping partnerships existed. In the first place, liability was not limited; the investor was obliged to pay all costs for his share in the polder. When for some reason costs of drainage were much higher than expected, participants even could go bankrupt. There are no cases of bankruptcy known for Staats-Vlaanderen, but elsewhere this did occur. Most investors avoided the risk of bankruptcy by simply not putting all of their eggs in one basket. They took modest shares in several consortiums. The larger projects were all financed by a group consisting of some twenty to sixty investors. In the second place, participants did not pay their share in advance, like in shipping partnerships, but they paid in instalments during the projects, the size of the instalments depending on the costs. This explains why permission was often required when somebody wished to sell his share. One had to be sure the new participant would be able to fulfil his obligations. Since an embankment had to be completed during the spring and summer season, there was not enough time to force a failing participant to pay by applying to court. The other investors had to pay for his share and hope they would be reimbursed one day.

The *compagnie* appointed a board that was responsible for the execution of the project. The board usually consisted of a dike-reeve and a number of 'gezworenen' (literally: jurors). Often board members were technical specialists from outside the *compagnie*, but some participants were also board member to keep an eye on things. In the case of Groede for instance two out of six 'gezworenen' were participants in the enterprise: Middelburg merchant Jan Mailliaert, who was also treasurer of the project, and another Middelburg merchant, Geleyn Versterre, who also acted as book-keeper.⁶ Clearly, the members of the *compagnie* wished to keep firm control over the financial side of the operation.

Motives for investment

We may assume people were prepared to invest in drainage in order to make a profit, but did they see this as a long-term investment or as a short-term speculation? In other words, did they intend to farm the new land themselves or lease it to tenant farmers, or did they immediately sell the land after draining? This last course could be very lucrative. In 1644 the town of Middelburg and the lords of 's-Heer Arendskerke drained the Middelburgschepolder (now part of the island of Walcheren). Drainage of 281 hectares was finished in June and cost 84,343 guilders; in December the land was sold for 178,392 guilders. The town and the lords had made a profit of 111 percent. Seventeen years later, they drained the Nieuwerkerkepolder in the same area. The part of the town of Middelburg cost 33,659 guilders and was sold in 1662 and 1663 for 69,575 guilders, again a profit of more than 100 percent was made (Walraven & Polderdijk 1896: 265-9).

No such clear examples exist for Staats-Vlaanderen, but some calculations can give an indication of the profitability of selling reclaimed land. In 1639 Ameliapolder near Biervliet was drained at a cost of about 150 guilders per hectare (see Appendix). In 1665 the land in this polder was valued at 360 to 450 guilders per hectare.⁷ In this case also a handsome profit might have been made by selling the land. If, however, costs rose to 300 guilders per hectare as in the case of Beostenblij-Benoorden in 1653-1655, then the margin became narrow, especially when additional costs as for the acquisition of rights of former owners are included. A lot depended on the costs of drainage. One breach of a dike could severely damage the prospects of the investors.

It is difficult to measure the profitability of leasing reclaimed land, because data about rents are scarce. However, we can make an estimate for Groede. Drainage of this polder in 1613 cost about 120 guilders per hectare. In the adjoining polder of Oud-Breskens, embanked in 1610, land was leased in the period 1610-1618 at seventeen guilders per hectare (Plankeel 1996). Since the land in Oud-Breskens consisted of the same quality as in Groede, we can suppose rents in Groede had the same level. After deduction of four guilders for the polder tax, a net rent of thirteen guilders or over ten percent of the invested capital remains. Since the land could be cultivated almost immediately from the moment of drainage, the invested sum could be repaid in ten years time. In this case also a lot depended on the costs of embankment. The net income from Henricuspolder near Oostburg, embanked in 1615 at almost 260 guilders per hectare, cannot have been more than five to six percent.

We may conclude that under the right circumstances both options, short-term and long-term investment, were profitable. But what choice did investors make? Let us look at some cases. In Ameliapolder the original investors or their heirs still owned all of the land in 1665, 26 years after reclamation.⁸ In other cases they were less unanimous, like in Groede. After this polder was drained in 1613, the land was divided among the participants and a tax register was made, summing up all plots of land and the names of their owners.⁹ The nine men who had requested the octrooi together owned 465 hectares in the new polder. Three years later so many mutations had occurred that a new land tax register was necessary.¹⁰ The property of the nine men now had diminished to 392 hectares. Only five of them still owned a considerable amount of land, the others had sold all or most of it. Of the remaining five Jacob and Cornelis Cats together accounted for 142 hectares and Nicolaes de Wale Rogiers, a Middelburg merchant and a prominent participant in the Dutch East India Company, for 117 hectares. This shows that not all participants in the project aimed at a long-term investment. Some of them immediately cashed their profits. This can also be observed in other projects. In Beoostenblij-Benoordenpolder in eastern Staats-Vlaanderen, drained in 1655, thirteen out of 26 participants had sold their land before 1665.¹¹ In the Beijerlanden area several investors sold their land quickly, while others enlarged their possessions (Baars 1973: 109).

The Cats brothers also had made a long-term investment. They had a farm built on their land, including a house with rooms for themselves and for a tenant. During the first few years, they farmed the land themselves (Meerkamp van Embden 1927: 47). In 1665 this land was still owned by their heirs. Another long-term investor was Henrick Thibaut (1604-1667), mayor of Middelburg. Between 1648 and 1657 he invested on a large scale in embankment in Staats-Vlaanderen, enlarging his possessions from only 127 hectares in 1648 to 1,153 hectares in 1665.¹² He was prepared to invest substantial sums – in his case 200,000 guilders at least – and to accept considerable risks to reach his goal. In the same period he also invested in a reclamation in North-West Germany together with his brother in law Anthony Studler van Zurck (Tenge 1912: 81-5). Clearly, this is the behaviour of an entrepreneur, not of an aristocrat. Obviously, Cats and Thibaut made long-term investments. How wide-spread the tendency towards long-term investment was can be checked by analysing the land tax records of 1665 for polders in western and central Staats-Vlaanderen with a total taxable land area of 24 630 hectares that were drained during the first half of the 17th century (see table 1).

	Private owners		Institutional owners	
	Hectares	%	Hectares	%
Middelburg	6 134	25	178	1
Other towns Dutch Republic	9 427	38	1 602	7
Towns Southern Netherlands	1 794	7	1 305	5
	17 355	70	3 085	13

Table 1. Place of residence in 1665 of landowners in polders embanked between 1590 and 1665. Sources: National Archives, Raad van State 2145 I; Zeeland Archives Middelburg, Handschriftenverzameling 1531.

Table 1 shows that urban landownership was predominant. Was drainage then for most urban investors a long-term investment? Looking at the 1665 tax records of the polder of Groede, it is surprising how few names of original investors are mentioned. Of course many investors had died by 1665. Also, not all heirs had necessarily the same surname, like in the case of Jacob Cats, whose land was inherited by his daughters and their children. But this does not explain all the changes of ownership.

Several important landowners in 1665 had not participated in the original drainage project. The brothers Gillis and Pieter Muenicx for instance, Middelburg patricians, owned 80 hectares of land in Groede. They had not belonged to the original investors, neither were they relatives. Likewise, they also owned large tracts of land in Beoostenblij-Benoorden and Generale Prins Willempolder. Individuals like the Muenicx brothers were willing to invest in land, but they evidently did not want to run the risks of participating in drainage. So they waited until the drainage had been successfully completed and then bought land from short-time speculators who were willing to sell.¹³

It is possible, then, to discern three groups of investors: short-term speculators, who sold their land after completion of drainage; long-term investors, who participated in drainage and leased the land to tenant farmers; and long-term investors, who bought land from the first group after completion of drainage and then leased it to tenant farmers. The 1665 land tax records indicate that although part of the urban investors were short-term speculators, most of them had made a long-term investment, resulting in 80-90 percent of agricultural land with urban owners. Especially inhabitants of Middelburg owned vast areas: over 6,000 hectares in the western and central parts of Staats-Vlaanderen. Most Middelburg landowners belonged to the town's political elite; thirteen patricians each owned at least 100 hectares, worth about 40,000 guilders. Together these thirteen owned 3,600 hectares. Among them



Figure 5. The most important investor in drainage projects in Staats-Vlaanderen: Henrick Thibaut (1604-1667), mayor of Middelburg. Portrait by P. Nason. Source: Zeeland Archives, Zeeuws Genootschap, Zelandia Illustrata IV, 870.

we find the names of the most powerful and wealthy patricians like Henrick Thibaut, the brothers Apollonius, Jacob and Martinus Veth and their sister Catharina, widow of David van Reygersberge. Twenty-three others owned 50-100 hectares, worth at least 20,000 guilders. Since many of them probably also owned land elsewhere, a considerable part of their capital must have been invested in land. According to 1672 tax records, the capital of members of the 25 most wealthy families of Middelburg ranged from 40,000 to 330,000 guilders (Van der Bijl 1981: Appendix XXI).

The fact that Middelburg patricians invested so much in land can be interpreted as an indication of a tendency towards aristocratisation, especially since in this period many also bought manors and tried to obtain knighthoods from foreign monarchs. But there may be a better explanation for this phenomenon. An economic history of Zeeland in the 17th century has not yet been written, but we do know that the province gradually faded away from the centre of trade and shipping to become a rural 'province in the periphery' as Brusse and Van den Broeke have called it (2005). Although agriculture also began to stagnate round about 1650, rents still remained at a high level. With trade and shipping declining, urban investors turned to leasing out land, which was still profitable. Thus, the increasing share of land in the fortunes of Zeeland patricians is not an indication of aristocratisation of the Zeeland economy, but of adaptation of investment strategies to changing economic circumstances. This can also be observed in Dordrecht, a town in South-Holland that by the middle of the 17th century was past its prime as well (Frijhoff, Nusteling & Spies 1998: 123, 145-7). Patricians from Dordrecht enlarged their estates in the Beijerlanden area in the 17th century, while patricians from nearby booming Rotterdam hardly invested in this region (Baars 1973: 109).

Confirmation of this view can be found in one of the very few remaining probate inventories from Middelburg, that of Willem Brouwer, treasurer-general of Zeeland, dating from 1662.¹⁴ Of his capital of 234,000 guilders 61 percent was invested in land, seven percent in houses and eleven percent in East and West India Company shares. He had no country house, neither horses and carriages nor any other sign of an aristocratic lifestyle. Brouwer was a wealthy landlord, but no aristocrat. The large share of land in his and other patricians' property reflects the increasing importance of agriculture for the economy of the area (Priester 1998: 68).

Conclusions

Between 1590 and 1665 12 to 15 million guilders were invested in draining some 39,000 hectares of land in Staats-Vlaanderen. This capital was mainly provided by groups of urban entrepreneurs. They were able and willing to do so because they had gathered a considerable amount of capital from trade, shipping and privateering and were looking for new opportunities for investment. By cooperating in consortiums they were able to reduce the risks involved, even though the fact that liability was not limited could still cause unpleasant surprises.

The public authorities played a decisive role in the success of the 17th century drainage process. Through the thorough octrooi procedure drainage consortiums were provided with the legal framework required to complete the operation without many legal or technical problems. Drainage was stimulated by granting generous tax exemptions. The fact that several high state officials themselves participated in drainage operations probably contributed to the States-General's positive attitude to land reclamation. Often, the Dutch Republic has been considered an institutional failure - and maybe rightly so because of its failure to solve crucial problems in the 18th century - but in this field the state operated efficiently.

Some urban investors were short-term speculators, but most of them made long-term investments and leased the land out to tenant farmers, which is indicated by the fact that in 1665 over 80 percent of the area of polders drained in the first half of the 17th century still had urban owners. It is unlikely that this pattern of investment was caused by a trend towards aristocratisation of the Zeeland elite. The main reason for investing in drainage projects was simply that it could be very profitable. Later in the 17th century, when trade and shipping declined, ownership of land remained relatively profitable. Obviously, the elite adapted its investment strategies to economic changes.

Appendix. Costs of drainage

Polder	Year of drainage	Total land area (hectares)	Costs per hectare (guilders)
Nijs- and Hooglandpolder	1610	774	160
Albertpolder	1612	963	107
Groede	1613	2,015	121
Henricuspolder	1615	430	258
Oranjepolder	1618	413	130
Ameliapolder	1639	372	151
Elisabethpolder	1639	340	170
Zaamslagpolder	1650	1,769	245
Bewestereede	1650	1,963	112
Generale Prins Willempolder	1650-54	3,275	204
Beoostenblij-Benoorden	1653-55	977	301

Table 2. Overview of the drainage projects, their size and their costs. Sources: Van der Baan (1859); De Kraker & Bauwens (2000); De Vleesschauer (1993); Zeeland Archives Middelburg, Verzameling De Hullu 63 and Handschriftenverzameling 1405; Water Boards: Waterschap Zeeuws-Vlaanderen, Watering Groede 98, 135; Generale Prins Willempolder 141; Beoostenblij benoorden 1 and Bewestereede bezuiden 31.

Drainage of 39,000 hectares of land cost approximately 180 guilders per hectare or about seven million guilders in all. Little is known about the costs of purchasing rights to flooded land or tithes. The few data from Staats-Vlaanderen we do know vary from 36 to 45 guilders per hectare, so we will estimate the costs at 40 guilders per hectare or about 1.6 million guilders in all.¹⁵ A safe estimate would be that one farm was constructed on every 25 hectares of agricultural land, so about 1,400 new farms may have been built in the new polders. Very little is known about the building costs of farms, but the available data suggest that 2,000 to 3,000 guilders per farm is plausible (Van Cruyningen 2000: Appendices). Costs of farm construction, then, can be estimated at 2.8 to 4.2 million guilders. The above leads to a total of 11.4 to 12.8 million guilders invested in a 75-year period. Of course there were more investments, like the building of churches, schools, windmills, labourer's cottages, etcetera, but these were paid for by their owners or by the public authorities. If we assume half of the farm buildings were paid for by the tenants, the total sum spent by urban investors would be c. 11 million guilders.

Notes

- 1 De Vries and Van der Woude (1997: 32) mention a total of 109,000 hectares for this period, however, due to underestimation of the area reclaimed in the South-Western Netherlands, the total must be some 128,000 to 129,000 hectares.
- 2 Zeeland Archives Middelburg (ZA), Vrije van Sluis 513.
- 3 National Archives The Hague (NA), Staten-Generaal 4925, 11 April 1612.
- 4 ZA, Verzameling De Hullu 63, contract for embankment of Oranjepolder 13 January 1618.
- 5 For instance, Archives Water Board Waterschap Zeeuws-Vlaanderen (WZV), Beoostenblij benoorden 1 f. 35v.
- 6 WZV, Watering Groede 98.
- 7 NA, Raad van State 2145 I.
- 8 Ibid.
- 9 WZV, Watering Groede 476.
- 10 ZA, Verzameling De Hullu 75.
- 11 This can be observed by comparing Prinsen (1993) with NA, Raad van State 2145 I.
- 12 NA, Raad van State 2145 I.
- 13 Municipal Archive Terneuzen, Oud Archief Axel 679 gives a good impression of the many changes in landownership that took place after embankment of several new polders like Zaamslag, Canisvliet and Beoostenblij benoorden in the 1650's.
- 14 ZA, Godshuizen Middelburg 1459.
- 15 ZA, Handschriftenverzameling 1405, Verzameling De Hullu 63.

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