

Rulers and Ruled in Flood Protection during the Eighteenth Century

The Prussian Example

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PROJECTS ON THE ODER, NETZE, AND WARTHE FROM THE EUROPEAN PERSPECTIVE

The Prussian diking and cultivation of the river bottomlands during the eighteenth century attracted significant attention, not least because it involved the risky plan of rerouting a section of the Oder River at the northern end of the Oderbruch.¹ Moreover, the Prussian King, Frederick William I (1713-1740), and his son, Frederick II (1740-1786), declared the project a special goal of the state, made a strong financial commitment, and ran the risk of failure (Gudermann 1999, 352-354).

Certainly, the diking resulted in the expansion of high-quality royal agricultural lands from which the state itself benefited directly. Here, however, the question will be investigated to what extent there were broader objectives, above all, the protection of inhabitants, with their homes and farmland, their animals and their production, from the frequent flooding. The regions' climate improved and it became viable to invest in infrastructure. The exploitation and securing of Prussia's best farmlands resulted in an increase in the yields of everyone involved in agriculture. As a result, it was possible to expand the food supply in the country. The river bottomlands, considered in the context of the widespread serfdom, became a model system of agriculture with secure ownership and freedom of movement for small producers. The Prussian state—until this time an agricultural state—offers interesting insights into these interrelations. Nonetheless, such measures were in no way unique in Europe.

THE PREHISTORY OF FLOOD CONTROL AND
COASTAL PROTECTION IN EUROPE

The first documented flood control structures on European rivers were in Mycenaean Greece in Orchomenos around 1500 BCE (Knauss 1990, 23, Knauss 1987, 106–107), and later in Koroneia in Kopais (Greece) in the first century CE, which was under the reign of the Roman Emperor Hadrian (Fossey 1991, 5–26). There are further indications of river dikes constructed during the Roman Era, including Italy, the Netherlands, Central Europe, Romania, and Great Britain—where several shipping canals were dug and provided with dikes (Winkander 2000, 321–330). Dike building then subsided until the end of the early Middle Ages, from which point there are indications that levees and dikes existed on estuaries and rivers with flat shores. This was the case on the Loire (France), which had levees in the ninth century and partly dikes in the twelfth century (Garcia and Pusch 2002, MGH, 301). Facilities for flood control also existed in the Po Valley (Italy) in the twelfth century. This older trend was also strong in Central Europe, where “all of the larger rivers and most streams . . . [had] been changed considerably since the early Middle Ages” (Jäger 1988, 18). Indeed, dikes were built on the Lower Rhine (Germany/the Netherlands) in the ninth century. The Dutch worked on the Elbe (Germany) during the twelfth century (Schmidt 2000, 106–107, Hofmeister 1981, 7, Boeselager 2003, 234), and the Vistula (Poland) was diked in the thirteenth century (Ehlers and Winkel 1947, 8), while the Oder (Germany) received its first dike in the fourteenth century.² Dike work, drainage, and cultivation were done on numerous other rivers in Central Europe, including the Scheldt and the Meuse (Belgium/the Netherlands), the Ems and the Weser (Germany) (Berendsen and Stouthammer 2001, 13, Allemeyer 2006, 35–37, Peters 2005, 26–27), the Danube (Germany to Hungary), and the Vltava (Czech Republic).³

Outside Central Europe, in 1703, Dutch engineers helped establish the Russian city of St. Petersburg where the Neva River flows into the Baltic Sea.⁴ Dike work was first done on the Rhône (France) in the mid-eighteenth century and on the Tisza (Hungary, Serbia) at the end of that century (Szűcs 2010, 243–245). Dikes were built on the Sava (Slovenia, Croatia) and on the Drava (Croatia, Hungary) in the eighteenth and nineteenth centuries.⁵ In England, dikes were built on the River Tweed around 1800, and on the Thames and the River Severn at the end of the nineteenth century.⁶

Although river dikes were presumably developed before sea dikes, river dikes were significantly influenced by the diking of the sea. The first Roman reports about life on the North Sea, by Pliny the Elder in the first century CE and Tacitus around 100 CE, describe the extremities of life in living among the tides and cold, the storms and rain. At Isca Augusta, near Caerleon in Wales, structures dated to

(74–75 CE) protected the community from the ocean (Rippon and Cameron 2006, 76, Campbell 2012, 176). Archeologists have also shown that an early sea dike near a farm at Feddersen Wierde, situated on the North Sea coast of Lower Saxony (Germany), was built in the first or second century CE (Krämer 1984). Additional sea walls on the North Sea coast were built in Flanders (Belgium) before the end of the tenth century, while additional ring dikes were built around farms and villages on the German North Sea coastline in c. 1000 CE (Ey 2005, 147–149).

Dike construction on rivers and on the coast is thus a technology dating back millennia, which indicates that people in Europe, especially in the south, west, and center of the continent, developed and secured areas to deal with a lack of space and good conditions for settlement made so urgent by the circumstances of the time. This trend continues—although it is increasingly controversial—to this day.

DIKE CONSTRUCTION AND MAINTENANCE

In addition to protecting existing settlements and agricultural areas, both river dikes and sea walls were used to reclaim land that was particularly fertile for agriculture and suitable for new settlement.

Sea Dikes: At first, construction and maintenance went hand in hand. This was the case in certain areas on the North Sea coast until the eighteenth century. Originally, coastal inhabitants made the decision to erect and construct dikes on their own. Rulers of the areas in which dikes were built granted coastal dwellers who took the initiative more autonomy than the inhabitants of the interior because the extreme conditions on the coast did not permit effective feudal control. Given the weakness of princely rule, North Sea inhabitants became “peasant republicans” (Urban 1991, 50, 59, 119). The more secure the land became, so the infrastructure became more developed, and income increased—resulting in greater danger of a hostile takeover. In 1500, the Danish king’s first attempt to subjugate the area failed and the peasant republic subsequently flourished. The second attempt was successful, however, and the region was more firmly incorporated into the Danish kingdom in 1559 (Bohn 2006, 41, 57).

The coastal strategy of territories and states began to change in the sixteenth century. Like many other areas, they became actively involved in dike matters—particularly once traditional oral coastal law was codified.⁷ At the same time, technological improvements were often triggered by periods of heavy storms. Indeed, after the Burchardi Flood of 1634—also known as the second “Grote Mandränke”⁸—Johann Claussen Rollwagen, the new *General-Deichgraf* of Duke Frederick III of Gottorp (1616–1659), launched a new section of dikes on the west coast of Schleswig-Holstein, while reorganizing construction so that it was no longer the communal task of marsh inhabitants but performed by professionals. Thereafter, the responsibility of the inhabitants was focused more on dike maintenance—and they were no longer able to keep the new land for themselves as a

result. This intervention of the territorial state was further strengthened after the Christmas Flood of 1717, which was known as the largest flood at the time and claimed more than eleven thousand victims.⁹

River Dikes: The existence of river dikes in the Middle Ages and early modern period has been frequently documented.¹⁰ Northwestern continental Europe and western Central Europe seem to have preceded eastern Central Europe: that is, the technological transfer moved from west to east. The Dutch were the leaders in coastal protection and other forms of hydraulic engineering (Tols and Langen 2000, 358-366). Indeed, a large portion of the land in the Netherlands was created artificially—from dikes, diked marshland, canals, locks, and drainage equipment—and later became farms, villages, and towns. Broad sections of land below sea level were secured and developed as highly productive agricultural areas, and the first pumping facilities powered by wind (wind pumps)¹¹ were implemented in the region. In the twelfth century, the inhabitants of Friesland and Dithmarschen were the first eastern Europeans to learn from the Dutch. In roughly 1530, Frisian Mennonites (a Protestant religious denomination) were invited to cultivate the lower Vistula (Ludwig 1961, 34). As noted earlier, the first hydraulic engineers from the Lower Rhine came to Brandenburg-Prussia during the seventeenth century.

Immediately after the Thirty Years' War (1618–1648), Elector Frederick William of Brandenburg granted the Havelbruch—a small area north of Berlin—to the nobleman Jobst Gerhard von und zu Hertefeld of the Lower Rhine for diking and cultivation. In the model village of Neu Holland, settlers from the Lower Rhine followed the Dutch tradition in receiving rights of quasi-ownership, exemption from the requirement to perform servile labor, and freedom of movement in exchange for independently working and securing the land (Peters 1989, 18-30). In this small experimental area, dike maintenance appears to have been left to the new settlers as no dike decree is known to exist. In the rural world east of the Elbe, which was characterized by personal and manor serfdom, this concept was intended to spur emulation by the feudal lords of Brandenburg. It had limited success at first. The reconstruction of dikes was undertaken on the Elbe during the late seventeenth century; while the Havelland Luch (*CCM*, Part VI, Nachlese, “No. XVIII”) and the Rhinluch—areas near the Havelbruch—were cultivated in the eighteenth century. These were all state initiatives. In 1717, at the same time that the Christmas Flood hit the northwest, Frederick William I ordered the construction of a dike to protect the upper Oderbruch. This dike and the security it provided became a model for further land cultivation projects in absolutist Prussia in the eighteenth century (cf. part 2 on dike construction and maintenance on the Oder, Netze, and Warthe in the eighteenth century).

There are three early modern variants based on similar needs. The North Sea dike variant displays a democratic-communal structure, which continued to exist despite increasing encroachment by states or territories. River dike construction increasingly fell under the influence of territories. After the seventeenth century,

the differences between the variant of the northwest German territories—which were based more on class structure—and that of the more strongly authoritarian regions of eastern Brandenburg-Prussia and Prussia were, in essence, slight. In eastern Prussia, the local feudal lords with their extended estates were much more directly and energetically involved in the organization of dike maintenance, and they assumed a dominant role as a result. In western territories, the nobility—who were more dependent on rent income—tended to exercise their influence on events surrounding the dikes indirectly through the territorial estate assemblies (Melchers 2002, 43–45 *et passim*).

The necessity of building and maintaining dikes was perceived in various ways by those concerned. In places like the Netherlands, potential danger was extremely high and the necessity was repeatedly reinforced by flooding. When dikes were breached, floods affected not only areas reclaimed for extensive agriculture but also villages and towns, particularly as settlement increased. Such conditions made the obligation of dike construction and maintenance fully acceptable. This continues to be the case today, especially following the trauma of the floods of 1953. Resistance was more likely where new sea walls were to be built by state decree. The fishermen of the Oderbruch in Brandenburg had lived with floods for centuries, and rightly viewed their existence as threatened by dike construction in the eighteenth century (Kaak 2004a, 224, Kaup 1994, 126–127).

For centuries the area of northwest Germany, Belgium, and the Netherlands has been densely packed with people, industry, agriculture, energy production, and transportation infrastructure. Consequently, there is a problem in that old mine tunnels still exist under the mighty dikes of the Lower Rhine and several of its tributaries (Ruhr)—which complicate present-day dike maintenance (Tittizer and Krebs 1996, 34).

In order to build the dikes and ensure their safety, organizational forms had to be found and developed.

ORGANIZATIONAL FORMS: DIKE BANDS OR DIKE ASSOCIATIONS

There can be no negligence in the maintenance of flood control facilities, which demands considerable energy. From practical experience on a small scale, in instances where all interested parties were more or less equally affected, neighborly pressure at first helped dike and levee construction. The next level at which construction took place was the parish (the lowest church district), which included several villages. The dike associations grew and existed nearly everywhere that dikes and levees were built, whether on the sea or rivers. These still exist today as organizations in which membership is mandatory and which require work and monetary payments (Allemeyer 2006, 84–85, 91–93).

On the sea, Dike associations have existed in the Netherlands since the twelfth century. In Schleswig-Holstein (Germany) they were at first called “dike bands.” As the scope of projects grew, the number of dike associations decreased to a few with complex hierarchies governing numerous sub-dike associations. These associations were affected by a trend toward legal standardization, which was being introduced by the northwestern territories of the Holy Roman Empire of the German Nation, to which the Netherlands belonged until 1648. During the early modern period these territories—counties of East Friesland and Oldenburg; the Free City of Bremen; as well as the duchies of Bremen, Lüneburg, and Holstein—took control of dike supervision in a stepwise manner. Thus, the dike associations in East Friesland lost their autonomy in the sixteenth and seventeenth centuries: placed under the supervision of the state police, they lost the authority to establish their own statutes but maintained the right to elect their officers (Jakubowski-Tiessen 1992, 228). The dike associations on Schleswig-Holstein’s west coast corresponded to the parishes. The parish reeve was also the dike count, and therefore a member of the territorial administration. The dike judge—who was in charge of the inspection of certain sections of the dike, made neglect and damage public, and summoned those remiss in their official duties—was democratically elected by the dike band cooperative. Two to three dike inspections were performed annually by local commissions (Allemeyer 2006, 88–89). With the decree of January 29, 1800, King Christian VII of Denmark (1766–1808) created “a uniform legal basis” for Schleswig-Holstein in the “Entire State” of Denmark (which included Norway, Iceland, Greenland, and Schleswig-Holstein). As a result, the state controlled dike construction, without the dike associations losing their cooperative structure (CSVV, cf. Nawotki 2004, 179).

On the rivers: The northwest German political entities noted earlier also controlled river dike matters. Many other territories of the Holy Roman Empire, and later the German Confederation and Empire, acted in a similar manner, as construction measures on rivers also covered higher regions. Representative of the numerous policies of the early modern period is the Braunschweig-Lüneburg Dike Decree of 1664, which governed the dikes on the Elbe north of Hamburg. As in the aforementioned regions, local interested parties (*Deichinteressenten*) were formed into groups in which membership was mandatory. Dike sections and the property behind the dike were joined indivisibly, and dike sections were indicated by marked posts. The so-called *Ober= Haupt= und Amt=Leute*—the hierarchy of supervisors—was named by the territories and designated dike panels for three-year periods.¹² The democratic-communal structure of the North Sea was thus not duplicated here.

In 1695, further up the Elbe in Brandenburg, a dike decree for the Altmark area was issued based on that of 1476. It was intended to spur reconstruction after the Thirty Years’ War.¹³ The dike captain was nominated by the aristocracy of the

Altmark and confirmed by the elector. The decree also specified how many deputies from the nobility, towns, villages, and individual farms had to participate in the upper and lower inspection of the dike (Tit. I). More broadly, this decree comprised regulations for the dike inspection (Tit. II), detailed how the dike was to be maintained (Tit. III), and concluded with a comprehensive dike roll of the upper and lower districts. With this Elector Frederick III of Brandenburg (1688/1701-1713) issued in concession to the nobility a decree that did not leave any room for bylaws of the dike unions.

The dike decree of 1717 issued for the upper Oderbruch was based on that of the Altmark. The decree for this area described the division of responsibilities following dike construction. A small staff comprising representatives of the king performed inspections of the dike in cooperation with the *Deichinteressenten*, and distributed repair jobs and penalties. However, the dike union did not have the freedom to adopt a charter, and its members did not have the right to elect dike representatives. Farm owners played an important role among the deputies due to the size of their land and their ruling position in the villages of their areas.¹⁴ The General State Laws for the Prussian States of 1794 declared that dike affairs were “determined by special river, dike and riverbank decrees.”¹⁵ This was not amended until 1818, when the influence of aristocratic deputies in the dike associations decreased to the advantage of the urban and rural inspectors, and when local dike administrators were selected by dike association members—as specified by the Prussian “Law Regarding Dike Affairs” in 1848 (*GSPS*, 57, §15., f., cf. Rönne 1863, 610—613). These concessions to democracy resulted from the Revolution of 1848, when Prussia briefly opened the doors to change. In 1853, however, the Amendment of the Dike and Riverbank Decree for the Bottomlands in Lebus did not result in any fundamental changes, it essentially confirmed the altered division of property. Between 1861 and 1895, four melioration associations and dike subassociations were established within the dike organization of the lower Oderbruch.¹⁶

Dike affairs in the Oderbruch were part of a larger movement. Indeed, the *Yearbook of Official Statistics of the Prussian State* lists ninety-four dike associations with a total of 465,250 hectares of protected land in the nine “old provinces” of Prussia in 1866.¹⁷ These were almost exclusively river and Baltic Sea dike associations. In 1867, almost the entire German North Sea coast—including the annexed regions in northwestern Germany—were part of Prussia (Dörr 1995, 259-263). The upper and lower Oderbruch merged into a single association in roughly 1900. Dike associations shared the costs of construction with the Prussian state, each paying half (Spiegelberg 2001, 106-109).

The “Prussian Water Law” of 1913 treated the dike associations as water cooperatives and upheld members’ right to select governing boards themselves (Bochall 1913). The Water Association Law of 1937 unified water and dike affairs throughout Germany; based on the principles of the National Socialist regime, this law once again eliminated the right of members to select officers—a right

that had existed since 1848.¹⁸ When the united dike association of the Oderbruch protested the establishment of two armament firms in 1938, it was punished by having both its responsibilities for serious flood control and its authority to collect membership dues reduced. In 1940, all dike associations and subassociations of the region were merged into the Oderbruch Dike Association. The Second World War (1939–1945) had catastrophic effects on the dikes on the Oder. Indeed, the local dike commissions were only able to resume their work provisionally in 1947, and cooperation with sites on the east bank—now part of Poland—did not come to pass. The passage of the Law on the Dissolution of Common Separations, Interested Parties, Associations (*Gesetz über die Auflösung der gemeinschaftlichen Separations-Interessenten-Vereinigungen*) of 1951 by the parliament of the German Democratic Republic resulted in the dissolution of the dike association of the Oderbruch in 1953. Moreover, local commissions and melioration societies, which had been reestablished, were once again placed under the strict political oversight of state enterprises and institutions. A dike association with its own charter was not created again for a long period of time (Spiegelberg 2001, 106–109). In 1991, the Oderbruch Water and Soil Association was established from these groups and responsibilities. Consequently, the idea of a dike association on the basis of German federal law, and with its own charter (§6) and responsibilities (§2, §54), was also revived in 1991.

Today, the German government has largely taken over the financing of coastal protection and river dikes, while the federal lands take part in planning financing and construction. The main dike associations contribute significantly to making buildings secure and providing for dike defense in disasters. They also function as contractors of construction work. Contemporary dike associations are statutory corporations (*Körperschaften des öffentlichen Rechts*) that elect their representatives democratically.¹⁹

ENFORCEMENT

The collective construction of flood control structures demands a strict conception of facility maintenance, especially for those living behind the dike. Mutual supervision sufficed when neighbors organized the dike among themselves. When the scale of the work grew, however, keeping them in good working order without officials, inspections, and government enforcement was not feasible in the long run. The more centralized the organization, the greater the tendency of individuals to shirk their responsibilities. This is shown clearly by the struggles of officials in charge of the construction and maintenance of new dikes and levees on rivers and the sea. Whether cooperatively developed or imposed from above, the means of enforcement must be available.

In northern and eastern Germany in the Middle Ages, the *Sachsenspiegel* was the universal code of law.²⁰ Its most important passage regarding dike construction

was “Villages located on the water that have a dike must maintain their portion of the dike in good order. However, if flooding occurs which breaks the dike, everyone on the dike is required to help rebuild it. Those who do not do their part forfeit their right to property behind the dike.”²¹ A shortened form of this was passed into laws and oral tradition as “Anyone who won’t dike must step aside.”²² This principle was first codified as the *Spadelandsrecht* in 1557 (Allemeyer 2006, 84–86), and remained in force until the twentieth century. This essentially meant that anyone who was unable to participate in dike construction lost their property and had to leave the area. This drastic law reflected the tense situation near the sea. The dike court—or shovel court—provided that anyone who could no longer work on the dike had to stick their shovel in their section of the dike, or an inspector would issue the last warning when a *Deichinteressent* had neglected his responsibilities (Kühn 1992, 83).

Prussia was not the only land that used so-called military execution (against those who failed to pay their dues or work their share). It was also widely used for various purposes in other territories, as well as on the North Sea coast. Indeed, the practice was documented in East Friesland, Oldenburg, the duchy of Bremen, as well as in Holstein and Schleswig in even more severe forms than on the Oderbruch. Even after the Christmas Flood of 1717, *Restanten*—outstanding payments—were rigorously collected. This indicates that the readiness to work the dikes decreased following this disaster. Certainly, settlements were destroyed and many people drowned in areas immediately bordering the North Sea, while survivors were traumatized. Those in more distant areas considered themselves less threatened, and refused to contribute to the massive reconstruction project. The more forcefully rulers pushed the work, the more serious were local conflicts (Jakubowski-Tiessen 1992, 173–176, 243–244). Ultimately, territories and states—with the higher-level perspective, comprehensive planning, and effective means of enforcement—prevailed. Indeed, the Braunschweig-Lüneburg dike decree (1717) provided that a hand be chopped off for the crime of moving a marker post, while those guilty of the “malicious” breaching of the dike were burned alive. The Prussian state guaranteed the implementation of the requirements of this decree with “military execution” and, after 1754, prosecuted acts of sabotage with *Karrenstrafe* (hard labor while chained to a cart)—a relatively mild punishment compared to those of Bremen and Verden.²³

SECONDARY EFFECTS

The draining of an area resulted in the sinking of the water table, a change in climate, as well as a decrease in the variety of plants and animals. During the dike work on the Warthe, for instance, parts of the farmland on hillsides in the Warthebruch dried out, further disadvantaging inhabitants for whom the old settlements on the edge of the marsh had already become a legal detriment (Kaak 2012, 75). In 1800, Friedrich Wilhelm August Bratring quoted the opinion of King

Frederick William III's personal physician that the air had become "cleaner and more healthy since the reclamation of various marshes and the felling of forests because nothing blocks the winds blowing through" (Bratring 1968, 32-33). This characterization represents the opposite of what is called for today. A diminishing variety of species in the Oderbruch was evident in the eighteenth century. The town of Wriezen was no longer able to function as the Oderbruch's central fish market, which had supplied Berlin primarily.²⁴ This was considered collateral damage by contemporaries.

The stronger the continuous line of dikes was built, and the more the river's course was shortened, the higher and stronger dikes had to be. This is true of the North Sea, where flood barriers and the shortening of dikes reclaimed land from the sea. It is also true of rivers, where straightening and narrowing had the same result.²⁵ In 2013, heavy flooding due to heavy rainfall ("centenary extreme event") affected eight of sixteen German federal lands: Passau experienced its heaviest flooding in five hundred years, while the Rhine, Elbe, Mulde, Saale, Oder, Lusitanian Neisse, Danube, and Inn were particularly affected. Flooding along many European rivers—including the Danube, Drava, Vltava, and Vistula—prompted the rethinking of matters. Making facilities higher and stronger had done little to diminish the danger. In view of climate change, measures to return land to rivers have been called for with increasing frequency. Experts have also argued for the creation of flood polders—diked-in areas intended to take in large masses of water—and rain retention basins on tributaries of larger rivers. The renaturation of the riparian zones is supposed to return flora and fauna to their old variety once again (Jakubowski-Tiessen 2009, 181).

DIKE CONSTRUCTION AND MAINTENANCE ON THE ODER, NETZE, AND WARTHE IN THE EIGHTEENTH CENTURY

In 1709, another bout of serious flooding occurred in the Oderbruch, upsetting its already limited agricultural production. As a result, Frederick William, who would become King in Prussia in 1713, decided to protect the upper Oderbruch with a uniform dike. This was not to ensure the continued existence of agriculture, but to significantly expand production on the monarchy's most fertile lands with settlers recruited from abroad (Wentz 1930, 101). This took place approximately eighty kilometers east of Berlin in Brandenburg, the central province of the state of Prussia.

While the king was pressing for economic progress and settlement in the sparsely populated backwaters of Prussia; the head bailiffs on the estates of the Order of St. John (*Amtmänner*) and royals, as well as the noble manor lords (*Gutsherren*) with their feudal operations, were striving to secure and expand their areas of cultivation. Meanwhile, the peasants required continuity, at minimum, to raise their livestock. It is less clear how local feudal lords were involved in securing

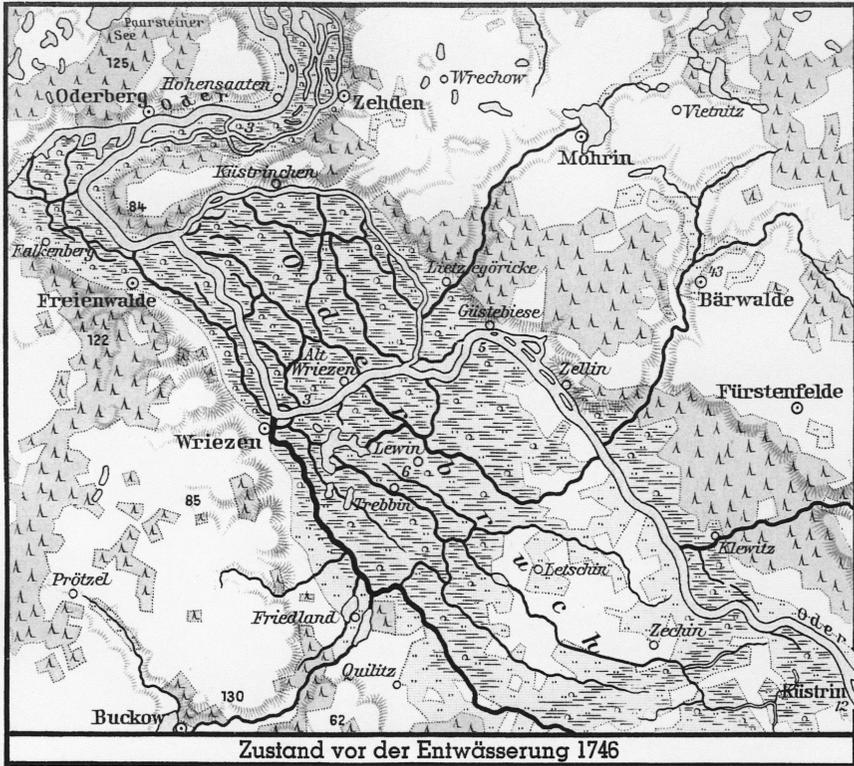


MAP 2. Colonization of the Oderbruch during the Reign of Frederick II
 Source: Stier 1957, 69.

the dikes—that is, in an important administrative duty—and what advantages and disadvantages that such involvement brought them. The sequence of events is illustrated by occurrences in the upper Oderbruch between 1716 and 1717. This also provides insight into dike construction in the lower Oderbruch, the Netzgebruch, and the Warthebruch. (See map 2.)²⁶

PUBLIC GOODS IN THE EARLY MODERN PERIOD

In contemporary theory, the term “public goods” encompasses a nearly unlimited set of tangible and intangible measures taken by governments (or their official representatives) on the national, provincial, regional, and local level to guarantee or improve the peace, security, and social justice at all or any level using specific



MAP 2. Continued

educational, cultural, and technical standards (Becker 2002, Ledyard 1995, 111–194). While the scope of government involvement was more modest in the early modern period, there are fundamental patterns of thought and action that are comparable. These involve national defense, the rule of law, ensuring production and foodstuffs, the safety of roads, as well as guaranteeing the basic principles of religion. Rulers also act on behalf of those who do not share costs, and can establish methods of enforcement to maintain specific needs (Hattenhauer 1996, 600–602, 734).

The problem of securing and cultivating river bottomlands in Brandenburg in the eighteenth century is particularly revealing in this regard. The late Middle Ages saw several attempts at flood control on the Oder, in the form of dikes that protected several villages. In the sixteenth century there was a continuous line of dikes for a small portion of the Oderbruch,²⁷ but this was partially destroyed in the Thirty Years' War (1618–1648) and fell into disrepair thereafter. In the eighteenth century, construction plans reemerged on a brand new scale when the Oderbruch, the Netzebruch, and the Warthebruch were extensively drained and settled using state resources. The population increased significantly in the area near the dikes,

and rivalries arose between the old peasants and the new colonists. There was particular resistance from the original inhabitants—especially fishermen—who could not or would not support the changes. To give the project some security, the state issued decrees regarding dike maintenance and integrated both local feudal lords and communities into the system.

The scope of responsibilities expected of local feudal lords—particularly the manor lords and head bailiffs of royal property and those of the Order of St. John—as part of the state measures to ensure flood control in the eighteenth century must be taken into consideration. This includes examining which duties regarding the supervision of the protection system were specifically assigned to them, what methods of enforcement were at their disposal, how inspection worked in tandem with other duties, how effective their contribution to the linking of feudal and state activities actually was, and how finances were organized. Evidently, the organization of these matters was almost automatically given to local feudal lords, who were already firmly entrenched in land ownership, the control of the courts, and the administrative apparatus. A question arises regarding the extent to which these additional responsibilities altered the relationship between rulers and local communities.

When King Frederick William I of Prussia made the decision to dike the upper Oderbruch, he proceeded with all due caution—it was, after all, his first large project of this type. On December 30, 1716, he issued a preliminary dike and riverbank decree so that, as the final version read, “all interested parties better understand such a useful work and are able to inform themselves about it” (*CCM*, Part IV, 2nd Section, IV Cap., “No. XVIII,” cc. 303). Such need was established on the assertion that

Our [royal] in Amt Lebus, as well as many noble villages on the Oder and the lowlands, or located in the so-called marshes, are flooded almost yearly by the rising and overflowing of the waters of the Oder, and their farmlands, pastures, and droveways are laid waste to the great detriment and inconvenience of Ourselves and Our subjects.²⁸

Compounding matters,

it could not be countered with adequate effort or precaution, not only because many localities lacked the necessary supervision, but also because a few localities which own farmland and pastureland in marshes have contributed or performed very little toward the conservation of existing dams or ponds; others, in contrast, had to build and maintain more dams than they were able to afford, as well as the ponds laid in such a way on the edge or banks of the river, as to be almost completely unprotected from its attack and its violence. (*CCM*, Part IV, 2nd Section, IV Cap., “No. XVII,” cc. 294–295)

As expressed in the preamble of the decree of June 1717, suggestions for improvement were received and the decree was significantly expanded—by means of the dike roll, for example (*CCM*, Part IV, 2nd Section, IV Cap., “No. XVII,” cc. 294–295).

As such, the king recognized a serious problem, identified the causes, and understood that inhabitants were not in a position to take common action on their own. Realizing that there was no other institution that—given the conditions

of the time—possessed the power, means, and authority to rectify the problem and provide a lasting solution, King Frederick William I ordered the large construction project. As the recognized ruling power, he subsequently issued a decree on his own authority that integrated all concerned parties into a system of controls and services. He committed all parties to serve the power of the state, but above all to each one another as neighbors—thereby endeavoring for the fair distribution of burdens. In the medium term, obedience was rewarded with improved quality of life, while negligence or resistance was threatened with penalties up to and including military intervention to compel service. However, the king's initiative was not purely intended for the well-being of his subjects. The expansion of farmland, as well as of both agricultural production and population, was also in the narrow interests of the state. To a large extent, the area to be diked comprised royal domains and thus provided the state with an immediate fiscal advantage.

DISTRIBUTION OF LAND AND RESPONSIBILITIES IN THE UPPER ODERBRUCH IN 1716

Except the *Immediatstadt* Küstrin,²⁹ the area planned for dikes comprised three *Mediatstädte*³⁰ of Lebus, Göritz, and Seelow, as well as forty-one villages. Of these forty-four settlements, nineteen had agricultural operations that were manorial and twenty-two did not,³¹ while three villages had become purely manorial operations. The *Mediatstädte* and twenty-one villages were located on royal demesnes (twenty-two on the Lebus demesne, and two on the Quartschen demesne).³² Fourteen villages were on land owned by the nobility (twelve noble, two *Adelslehne*).³³ Two were on land of the Order of St John, two on that of the Margrave of Brandenburg-Sonnenburg, and one on university property. As nearly all land in Prussia east of the Elbe was divided into local feudal districts, the *Mediatstädte* as well as all the villages and manorial operations were under feudal seigneurial.³⁴ Altogether the agricultural area of the lords in twenty-five villages of the upper Oderbruch comprised about a quarter of the total area: that is, barely 23%—a relatively low percentage. Elsewhere in East Elbian Prussia, such land comprised about 40% of village acreage at the time. This is because land in the Oderbruch was difficult to convert to agricultural uses prior to 1717, and was less interesting for manorial use as a result. The peasants of the villages where there were no manorial operations were also bound by the feudal system and required to perform servile labor.³⁵

Given the scale of the construction plans and the ever-present doubt regarding its feasibility, only the state was able to take the initiative, as well as provide financing and organization. In any case, rather than weak local dikes, it was a matter of building a continuous fifty-kilometer-long dike (50.721 kilometers) on a middle-sized European river. This dike was intended to channel the waters of the Oder into a narrowed course, and thus had to be higher and significantly stronger than anything similar that had been previously built in Prussia. Under the supervision of royal director of Agriculture, Martin Friedrich von Creutz, a continuous wall was

built on the east side of the river's main course from Lebus to Zellin in 1716–1717. This was followed by the Royal Dike Decree of 1717 (*CCM*, Part IV, 2nd Section, IV Cap., “No. XVIII”), which created a dike association in the upper Oderbruch to assign maintenance duties, as well as govern the villages, demesne farms, and estates located in outlying areas that did not directly border the dike. This association was not organized as a purely cooperative and autonomous body—behind everything stood the Prussian state with its laws and enforcement measures. In the implementation of the project, that royal lands dominated the upper Oderbruch was a distinct advantage for Frederick William I. After all, the king himself was the largest feudal lord in the area. The dike decree also included the dike roll, in which were entered all interested parties—so-called *Deichinteressenten*—from the royal demesne and manor farms of the nobility down to the owners of small sub-farms, as well as the dike portion of each (Dike roll, *CCM*, Part IV, 2nd Section, IV Cap., “No. XVIII,” cc. 305–326). According to this directory, which was given in rods (3,777 meters), royal estates accounted for more than twenty-six kilometers—that is, over 50% of the total length of the dike (6,573 rods for the Lebus estate and 340 rods for the Quartschen estate). As such, the king was able to influence dike construction and maintenance decisively through the royal head bailiffs who administered his lands. Similarly, the villages and estates of the Order of St. John and those of the Margrave of Sonnenburg—all of which were owned by Margrave Karl Albrechts of Brandenburg-Sonnenburg, a member of the Prussian royal family—totaled 1,490 rods. In addition to these, villages that were held by nobility or that were part of noble fiefs (held by seventeen noble families and their lines) accounted for 4,217 rods. Finally, 1,075 village peasants were listed in the dike roll. The allocation of the rods reveals the social structure of village mayors, farmers, cottagers, small farmers, and other peasants. Their section of the dike amounted to 9,722 rods of a total 13,429. They were thus the portion most heavily burdened with maintenance work (72%) and, as shown later, even more duties. (See table 7.)

THE ROLE OF THE LOCAL FEUDAL LORDS

Given the limited technological, communication, and transportation capacities in the early modern period, the practical securing of dike facilities in Prussia was a local duty. According to the *Realprinzip*, everyone who had land in the protected area was required to participate in flood control measures (Führ 1967, 5, Kluth 1997, 164–165). They were bound to this by a system that combined governmental legislation with forms of self-administration. Under a small staff of government officials, the *Deichinteressenten*—as members of the dike association—were required to act in accordance with the principles established by the king in the dike decree, particularly in securing the dike at their own expense and keeping drainage ditches in the diked area in good order. At the same time, the *Deichinteressenten* were integrated into the system as so-called *Mit-Urteiler*, or coininspectors. This applied to representatives of feudal property holders, as well as to the Church and feudal

TABLE 7. Dike Assignments in the Upper Oderbruch, in Rods/Feet

Feudal Lordship	Item	Rods/Feet	Peasants	Rods/Feet	Fd. Op.	Rods/Feet
Roy. Demesnes (incl. L., G. & S.)	25 ½	6.913/2	649	5.855/10	9	1.057/4
Noble Manors & Adelslehne	12 2½	4.217/2	235	2.712/6	16	1.504/8
Order of St. John, Commanderie	3	963/5	77	577/5	2	386/0
Mgr. of Sonnenburg, Demesne	1 ½	617/4	106	552/4	1	65/0
University of Frankfurt/Oder	1	24/0	8	24/0	—	—
Total Villages (incl. L., G. & S.)	44	12.735/1	1.075	9.722/1	28	3.013/0
City of Küstrin (incl. New. Ch.)	1	694/0	n. i.	n. i.	1	88/0
Total	45	13.429/1	1.075			3.101/0

NOTE: Item = villages and towns; Fd. Op. = feudal operations; roy. = royal; incl. L. G. & S. = villages on the royal demesnes including the small towns of Lebus, Göritz, and Seelow; Mgr. of Sonnenburg = Margrave of Brandenburg-Sonnenburg; incl. New. Ch. = incl. land of the Chamber of royal demesnes of the New March of Brandenburg; n.i. = no information.

holders of farmer, cottager, small landholder, and tenant parcels who were represented by their village mayors (village leader and village judge) and jury men (assessors of the village court) (*CCM*, Part IV, 2nd Section, IV Cap., “No. XVIII,” ch. X, cc. 332-333).

Local feudal lords (two head bailiffs of royal estates as representatives of the king, noble manor lords, the master of the knights, and a commander of the Order of St. John, as well as the city as a bearer of feudal rights) were included. They were affected in three ways:

1. As owners of manorial agricultural operations in the bottomlands, each of whom had to maintain their own sections of the dike for their own interest and those of the dike association;
2. As *Mit-Urtheiler* of the dike area who shared responsibility for dike inspection and for determining what work and penalties were necessary;
3. As manor and judicial lords—that is, as local rulers—of peasants living in the villages (*CCM*, Part IV, 2nd Section, IV Cap., “No. XVIII,” ch. X, cc. 332-333).

THE LEADING ROLE OF THE NOBILITY AND OTHER BEARERS OF FEUDAL RIGHTS IN THE EAST ELBIAN COUNTRYSIDE

The free settlement relationships were established in Brandenburg in the course of the eastward expansion during the Middle Ages (after 1150); thereafter, settler society was refeudalized. In the late thirteenth century, the first monasteries were

enfeoffed with villages, which until then had been part of the margravate. This was followed by the granting of fiefs in and around the villages to the knights who had conquered Brandenburg for the margraves. As such, the system of feudal lordship with tribute—at first minor services—and of the manor lords as the full owners of the farms was revived. In 1319, the death of Margrave Waldemar destroyed Brandenburg’s internal stability for the next century. Monasteries, the nobility, religious orders, and cities obtained additional rights from the territorial sovereign—particularly judicial lordships, which the documents termed the “higher and lower courts” (Assing 1995, 140, 156–157, Winkelmann 2011, 146–147). It was at first a question of dispensing justice, which strengthened manorial authority vis-à-vis their peasants, and of the court income obtained therefrom. The responsibility for local administration thus resulted in the increasing prominence of magistrate character. This seigneurial authority was replaced by manorial authority in the sixteenth century. Village inhabitants were made manorial subjects (personal serfs in areas near Brandenburg’s eastern border) who were obliged—besides paying cash rents—to perform servile labor, were bound to the soil (the personal serfs bound to the feudal lord), and were subject to weak ownership rights (*lassitisches Recht*), and their children were forced to work in the manor house and farms (*Gesindezwangdienst*).³⁶ Owning large manors, lords exercised seigneurial and jurisdictional control, as well as patronage of the church. They were, in modern parlance, the local tax authorities, registration office, trade licensing office, officers of the local church, and the largest commercial enterprise; they also controlled the mills and breweries that peasants had to use. Moreover, because they filled peasant positions and had the right to approve marriages, they had considerable influence on individual peasant families.

In 1653, Elector Frederick William of Brandenburg further strengthened the position of the local feudal lords—especially the nobility—based on claims of runaway peasants, entitlement to “unreasonable” servile labor, and the continuance of personal serfdom in areas where it already existed. Noblemen were to fill higher positions in public administration and the military. These concessions and offers were made by the elector in exchange for the power to raise taxes at his own discretion, and to free key policy issues from the influence of the territorial estates. Before the start of dike construction, bearers of feudal rights constituted an unavoidable force in the rural power structure. Since local nobles were extremely wary of interference in their home domains, they carried out the lowest duties of the military administration (Harnisch 1996, 141, 144), and took over the duties of school patronage after the introduction of compulsory school attendance (Neugebauer 1985, 255–260). The princely estates into which the elector or, after 1701, king divided his land were very similar to the farms of the nobility. These large operations were called *Vorwerke*. Beginning in the time of Frederick William I, these royal estates, or *Ämter*, were leased to citizens. While *Amtmänner* acted economically like noble landowners and were responsible for numerous magistrate

issues, they did not exercise any higher judicial authority and were bound by instructions in many areas—such as dike construction. All in all, the legal and ownership conditions of peasants on the estates of the king and the Order of St. John, as well as of the towns, were organized in a more tolerable manner than on the estates of the nobility (Müller 1981, 318).

THE FUNCTIONS OF THE DIKE ASSOCIATIONS AFTER 1717

The highest supervisory responsibility was held by the captain of the dike of the upper Oderbruch, under whom were two dike counts each responsible for half of the dike's length. Under these dike counts were three dike masters who performed inspection functions, as well as enforcement functions with *Deichinteressenten* who had shirked their duties. *Deichinteressenten* were required to appear in their respective dike sections twice a year as *Mit-Urtheiler* before the dike inspection commission. The captain of the dike recorded damage and the penalties incurred. Fines and levies were to be settled on this occasion between the authorities and village mayors (CCM, Part IV, 2nd Section, IV Cap., "No. XVIII," ch. XV. and XVI., cc. 336-340). A dike financial official kept records of the dike association's income and outlays. Six pfennig per dike rod were to be paid annually; this money and any fines collected were used to pay state employees and to finance any construction that individual villages and so on were unable to perform themselves. (See figure 11.)³⁷

At first glance, it would appear that a group of *Deichinteressenten*—who were equals in principle—were considered *Mit-Urtheiler* and that *Deichinteressenten* were distinguished solely by the length of their dike section and not by their social status. However, the head bailiffs and the noble manor lords actually had more power than other commission members. Whether nobles exercised the authority themselves or were represented by subordinates (administrators)—due to their other duties as officers or government officials—they nonetheless organized the affairs of their villages and farming property themselves and were involved in all important affairs of their peasants at the lowest judicial level ("self-acting manor lords") (Kaak 1995, 78). While ruling over farm and village, they were closely linked to the possessions of the peasants. In the first half of the eighteenth century, the manorial parcels of land were complexly intertwined with those of the peasants (Kaak 1991, 69). The head bailiffs and manor lords had the right, derived from their judicial authority, to receive servile labor from their peasants (farm work, haulage service, and extraordinary services). This constituted a large percentage of the labor performed on the demesnes and manors in the eighteenth century. The maintenance of the lord's dike rods became a new area in which peasant farmers, cottagers, and the like could be utilized as servile laborers—and a shifting line formed between dike labor and extraordinary labor as a result (Kaak 1999, 138-144).

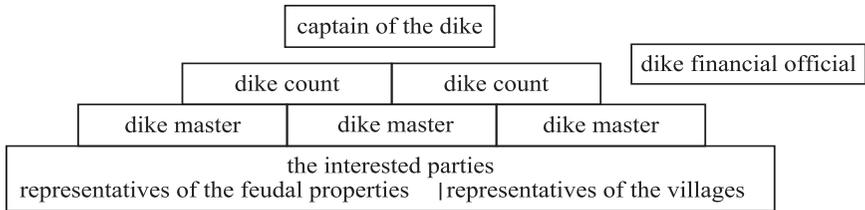


FIGURE 11. Organigram: The Hierarchy of the Dike Control (Upper Oderbruch)

MEANS OF ENFORCEMENT AND ADDITIONAL PROJECTS

The use of means of enforcement refers to subsequent projects. The most serious punishment that the master of the dike could threaten or impose was so-called military execution. In August 1716, King Frederick William I ordered all regiments in the area to be at the ready to compel the necessary support efforts. This principle was confirmed in the dike decree of 1716 (*CCM*, Part IV, 2nd Section, IV Cap., “No. XVII,” cc. 304). The general threat of this particular measure was clearly sufficient for construction work up to 1717. However, disputes over additional dikes increased in the face of the earlier project’s consequences. The waters of the Oder had been pushed toward the east bank and larger quantities flowed through the Oderbruch into the lower marshlands, which acted as collecting tank. The construction of 1716–1717 forced a continuation of the enforcement measures, which in turn led to the heightened potential for conflict.

The use of military execution did not entail individuals being put to death. Rather, it involved situating soldiers in the houses of rebellious peasants, and putting pressure on them to provide shelter and food; it was intended to create a willingness to perform work and make payments. Manor lords also made use of this execution when peasants refused to perform other servile labor, as the conditions in which the law could be used were not stipulated precisely. As such, a gray zone developed. This included the use of military service, which manor lords often used to shield their land and peasants, while noble officers—often manor lords themselves—supported them (Kaak 2010, 182–184, 268–270).

As larger and more complicated work was undertaken to build dikes in the lower Oderbruch, attempts to sabotage construction emerged in 1747. Consequently, Frederick II increased the degree of punishment and ordered the use of the *Karrenstrafe* against saboteurs. In the *Karrenstrafe*, infringers were made to work on the construction of fortifications while chained to carts for weeks or months on a diet of bread and water (Kaak 2010, 183, 370). This affected the fishermen, whose basis of existence worsened radically after the area was drained; while the lives of farmers, cottagers, and the like improved.

Despite the complications, dike construction and the cultivation of the lower Oderbruch, between 1747 and 1752, proved a great success in terms of both

economics and propaganda. Although the first generation of new settlers was not free of servile and menial labor duties, they did have a right to their land that resembled real ownership—unlike the older *lassitisch*³⁸ peasant inhabitants. Once again, the king was dominant and controlled nearly half of all the developed parcels. The previously mentioned margrave and master of the knights, Karl Albrecht, who owned more than a quarter of the cultivated area, also played an important role in the central Oderbruch. It was he who established colonist villages and demesnes on the Quilitz and Friedland margravate estates and on the neighboring Grüneberg estate of the Order of St. Johns. Noble families and cities shared a further area (Kaak 2012, 179–180). Indeed, while this dike was “only” about forty kilometers long, the effort and risk were greater. This risk was due to shortening of the Oder by some twenty kilometers using a canal, and because drainage facilities played a much larger role. According to the dike decree of 1769, the *Deichinteressenten* of the upper Oderbruch also shared the responsibility for sections of the lower Oderbruch (NCC, Vol. IV, 1769, “No. 7,” cc. 5123–5125).

As a result of the success of dike construction in the Oderbruch, Frederick II was overly hasty in ordering the cultivation of the Netzebruch and Warthebruch in 1770. After the Netzebruch had been successfully drained, the Dike, Riverbank, and Trench Decree for the bottomlands was issued in 1779 (NCC, Vol. VI, 1779, “No. XLII”). In the beginning, favorable weather resulted in settlement of the areas in the lower Warthe before the dike there was completely finished. In 1775, however, a flood destroyed much of the finished work in the Warthebruch. Furthermore, the topography of the area was more difficult to convert to a closed polder landscape than the Oderbruch had been. There were parallels between the lower Warthe and the upper Oderbruch: in the latter, dike work and cultivation were performed around the royal Lebus estate, while in the former it was the Order of St. John with its extensive holdings at the Hospitaller Sonnenburg estate (10,000 ha) that determined the course of events (Kaak 2012, 183–184). The nobility played a smaller role than the Order, colonizing cities, and middle-class property owners. The original idea of Frederick II and his youngest brother August Ferdinand—who became the master of Knights of the Order of St. John in 1763—was to provide large parcels of land for the settlement of more significant colonists (economically stable, full acquisition areas, or *Vollerwerbsstellen*) and thus provide a model for melioration on the manor estates of the other feudal landowners. Consequently, a dike decree was issued in 1802 (NCC, Vol. XI, 1802, “No. XX.”).

WHO ACHIEVED WHAT IN PARTICULAR?

The cultivation of the lowlands of the Oder, Netze, and Warthe showed itself to be an extremely successful project in several respects. The protected farmland with its dikes and drainage facilities became a symbol of Prussia’s talent for innovation in the public opinion of the rest of Europe.

This reclaimed land was seen as the act of a far-sighted king. At first, however, this was only true to a certain degree in the upper Oderbruch. Gottfried Wentz writes in his publication on the history of the Oderbruch:

In the reorganization of the conditions in the upper Oderbruch, the king [Frederick William I] was thinking and acting like a large landowner. The intrinsic value of viable farms as economic factors was not recognized, rather rural inhabitants were considered only in their capacity as villeins, a source of service and payment. (Wentz 1930, 169)

Indeed, after 1722, an expansion of the already-dominant royal properties in the Oderbruch took place in the upper Oderbruch, first because the king claimed large portions of the cultivated land for his own estates, and second because he purchased the noble villages of the families von Burgsdorf, von Kameke, von der Marwitz, von Pfuhl, and von Sydow. While property of the nobility totaled about 30% of the dike rods in the upper Oderbruch in 1717, it began to decline. Indeed, the very large Lebus royal estate acquired so much new farmland and so many new settlers that it was subdivided several times after 1736. In addition, two new estates were established. Although Friedrich Wilhelm I's governmental activities in this area did resemble those of a large landowner, Wentz's criticism is grossly exaggerated. He overlooks that first of all the king protected the inhabitants—including those who did not own land and who were thus not obliged to make payments or provide service—and he ordered the construction of infrastructure in the populated areas. Not until the second step did he help the state project *Bruchkultivierung* (marsh cultivation) achieve a new scale. Without subscribing to the Oderbruch mythos, one can say that an important development was then completed, one that had been conceived as part of an entire spectrum of innovative political measures.

When his son Friedrich II continued the colonization of the lower Oderbruch shortly after 1750, he was able to take advantage of organizational models that helped him protect inhabitants and to expand agriculture in the river bottomlands, which in turn supported other state goals. The fact that in the Seven Years' War he risked everything he had achieved is another story.

In 1752, Margrave Karl Albrecht, the master of the Knights of the Order of St. John, started establishing colonies and demesnes on the order's properties in the central Oderbruch before expanding this work to his neighboring margravate leased estates. The work complied with the ideas of Frederick II; however, as Frederick's older relative, he took the liberty of proceeding according to his own plan. His successor, Prince August Ferdinand, Frederick's younger brother, was faced with a much larger task on the Warthe and took a largely subordinate role to the king as a sort of junior partner. Under his tenure, numerous colonies and demesne farms—some with foreign names (Ceylon, Havannah, Penvylanien, Philadelphia, Saratoga, Savannah, Sumatra)—were established. And indeed, the revenues of the Order of St. John doubled between 1763 and 1811.

In the lower Oderbruch, nobility with 18% of the land were involved in reclamation, while in the Warthebruch, where even less noble colonies were established, Lords von Waldow and von Wreech were particularly conspicuous in this regard. Town property played a bigger role than it did in the Oderbruch. Indeed, the town Landsberg an der Warthe on its own outperformed by far the limited reclamation activities of the towns Oderberg, Wriezen, and Freienwalde.

In principle, Frederick William I and Frederick II pursued economic goals when they reclaimed land while the nobility focused on business goals. Despite serious setbacks the kings, the margrave, and the prince were successful in creating fundamentally secure farmland of the highest profitability out of the river bottomlands, securing the existing royal villages—as well as those of feudal lords and towns. They also succeeded in significantly concentrating the population through settlement under improved law and in stabilizing the general provision of foodstuffs. The amount of time and the cost of reclaiming land increased significantly from one area to another. The large requirement spent by the state treasuries on construction was money the kings considered well spent. This was easy to accept because the royal property in Oderbruch grew along with its resident population. This well-secured and highly productive agricultural area provided additional income for state coffers, which could be used to improve infrastructure inside and outside the dike area (waterways, canals, bridges, postal systems), to create a school system as well as to improve the quality of the science, and, last but not least, to strengthen the standing army.

However, in the Warthebruch the stated goal of settling large areas with large numbers of colonists was only partially achieved. Because of dwindling demand from prospective settlers, part of the land was formed into demesne farms that also proved to be extremely productive.

The situation of the long-established manor subjects or serfs only improved slowly during the diking and cultivation. Their rights of possession improved in small steps but they were only rarely able to win their freedom. A number of them were even placed on *Kleinststellen* under conditions similar to the corvee system to work the new demenses of the Order of St. John.

When most of the new settlers enjoyed personal freedom and were free from servile labor duties, able to develop their own production, largely independent of one another, and unencumbered by the three-field system, an important goal had been reached (Kaak 2004b, 99–101). However, the influence on noble landholders was tentative.

In the marsh areas all of this contributed to the self-esteem of the inhabitants because it strengthened their awareness gradually of their own share in progress and in the increasing income. For this they continued to deal with manorial lords and the managers of the princely estates on many issues. Like the royal and the Order's demesnes, as well as the noble manors, the villages also were members of the dike associations. The delegation of responsibility had been experimented with in the upper Oderbruch, and later used in the rest of the Oderbruch, as well as the Netzebruch and

Warthebruch. Even if compulsory membership involved onerous work and financial burdens, it demonstrated that the population of the cultivated bottomlands accepted the region—with its steadily improved dike and drainage facilities—as its own.

NOTES

1. This contribution uses the older German names for these rivers: Netze (now Noteć) and Warthe (now Warta).
2. Until 1316, the Neuzelle monastery built a dike along the Oder and the Lausatian Neisse. Cf. Krüger and Oelze 2014, 330.
3. Danube: Mohila and Michlmayr 1996, Géra n.d. Moldava: Neuhäusl, Moravec, and Neuhäusl-Novotná 1965, 401.
4. Müller 1813, 503–504. To date, there have been 295 floods in Saint Petersburg. To control the flooding of the Great Neva, its shores and the three main canals were lined with Karelian granite.
5. Sava: Maissen 2002, 478–479. Drava: Michor 2014, 351–352.
6. Tweed: Boucher 1963, 130. Thames: Porter 1998, 192–193, 227, 264. Severn: Knapp 1979, 70.
7. The dike decree of Eiderstadt of 1595, the dike decree of Tondern of 1619, Royal Danish dike decree of 1634.
8. Menschentränke = Großes Ertrinken; a flood in which many people drowned.
9. In particular, Jakubowski-Tiessen 1992, 57–59, Egidius 2003, 104–105. General-Deichgraf = supreme dike reeve.
10. This is indicated by the Dutch dike decree of 1253, the dike decree of Düsseldorf and Cleverham of 1323, the first dike decree of Cleves of 1343, and the dike decree of Bremen of 1473. Cf. *ALZ*, col. 732.
11. Beginning in the sixteenth century, although some hold that they originated in the fourteenth century. Cf. Gasch and Twele 2013, 342.
12. *CBLG*, Cap. VIII, Sectio 4: Von Teich = Sachen, “Nr. LXXII” §§15, 19, 192, 193. Ober = , Haupt = , und Amtleute = supreme supervisors, district, and local magistrates.
13. Dike roll: *CCM*, Part IV, 2nd Section, IV Cap., “No. VIII,” cc. 273–286. Cf. Berghaus 1845, 218.
14. Schulze 1890, 378: Deichverbände and 416: Gesetz über das Deichverbändewesen von 1848.
15. *PrALR*, 1089. Intentional breaching of the dike in which flooding results in fatalities was punishable by death.
16. Spiegelberg 2001, 106–109. On the development of the dike associations in Prussia, cf. Armenat 2010, 116–118.
17. *JbSPS*, 80. Until 1866, in northwest Germany only North Friesland was part of Prussia (1744–1807); the kingdom was the dominant state in eastern Germany with a considerable exclave on the Rhine. The north German sea dike associations are not included here because Prussia did not annex a large part of north Germany until 1867.
18. Merck 1962, 732–733: “Instead of by an election, the chairman and his deputy were named to their office by supervisory authorities.” The law remained in force in the FRG until 1991, when a series of sections were declared void and the law was supplemented by another state law. Its by-laws were enacted by its supervisory authorities.
19. There are, for example, twenty-two dike associations in Lower Saxony, ten in Schleswig-Holstein, two in Bremen, and one in Hamburg. Length of dike sections, for example: eleven dike associations on the Aller (Lower Saxony) with 69.1 kilometers, an average of 6.28 kilometers of dikes per dike association.
20. 1220–1235 recorded by Eike von Repgow, with partial effect until the introduction of the Civil Code in Germany 1900.
21. “Swelke dorp bi watere lieget unde enen dam hebbet, die sie vor der vlut bewaret, jewelk dorp sal sinen deil des dames vestenen vor der vlut. Kunt aver die vlut unde briet sie den dam, unde ladet

man mit deme gerüchte dar to, die binnen deme damme geseten sien, svelk ir nicht ne helpt büten den dam, die hevet verworcht so gedan erva als he binnen deme damme hevst." Cf. *SSp*, L, V.

22. "Keen nich will dieken, de mut wicken" or "Wer nicht will deichen, der muss weichen." Cf. Kühn 1992, 83.

23. *DOHB*, 83, § 1: "shall be burned according to the common rights." Cf. Allemeyer 2006, 103, Mellmann 1795, 126.

24. Richness in fish: cf. Christiani 1855, 13–16. Loss of the richness: cf. Kaup 1994, 126–128. Resistance of the fishermen: cf. Wentz 1930, 111–114, 118.

25. Rita Gudermann counts the Oderbruch after the dike construction and bursting of dikes in the years 1770, 1771, 1780, 1785, 1829, and 1830 and so on. Cf. Gudermann 1999, 376.

26. On the activities of Frederick II, also see Kouschil 2012.

27. Wentz 1930, 97: "Beginning around the end of the sixteenth century, lively attention was paid to dike facilities on the Oder."

28. CCM, Part IV, 2nd Section, IV Cap., "No. XVII," cc. 294–295. Amt Lebus = royal demesne of Lebus.

29. Immediatstädte (*civitates*) were directly under the head of state (here the electors of Brandenburg, after 1701 kings of Prussia) and were thus independent of local feudal lords.

30. Mediatstädte (*oppida*) were under local feudal lords. Regarding the *Mediatstädte* in Lebus, cf. Vetter 1996.

31. Here feudal operations are understood to cover the large manor farms of the nobility and the demesnes of the king, as well as the Order of St. John, and other village lords—including universities.

32. Royal estates were feudal districts comprising several villages and demesnes; they were also called domains. The town of Seelow was part of the royal Lebus estate.

33. A noble family's fief possession that was part of a tenure of another noble family, feudal corporation, and so on.

34. The German Reich of 1871 was divided into two parts of similar size by the Elbe River, of which the northeastern (i.e., the East Elbian part) was more heavily dominated by the nobility.

35. For example, the villages of Gusow and Platkow were without manorial operations under the same noble lord, although the peasants from Platkow had to work in Gusow; similarly, the margrave peasants from Quappendorf had to serve at the manor of Quilitz, cf. Kniehase 1995, Kaak 2010, 76–77.

36. Kaak 1991, 224, Neugebauer 2009, 175. Lassitischer Besitz = Lassbesitz = ceded (*überlassen*) to the peasants for their use. Gesindezwangdienst = compulsory farm service of the subject children.

37. 80.574 d = 3.357 1/4 gr = 279 3/4 Taler.

38. See note 36.

REFERENCES

Literature

- Allemeyer, Marie Luisa (2006). "Kein Land ohne Deich—!": *Lebenswelten einer Küstengesellschaft in der Frühen Neuzeit*. Max-Planck-Institut für Geschichte 222. Göttingen, Vandenhoeck & Ruprecht.
- Armenat, Manuela (2010). *Die "vollkommene Ausbildung" der Schwarzen Elster: Eine multidimensionale Studie zur Wasserwirtschaft und zum Kulturlandschaftswandel, 1800–1945*. Münster, Waxmann.
- Assing, Helmut (1995). "Die Landesherrschaft der Askanier, Wittelsbacher und Luxemburger (Mitte des 12. bis Anfang des 15. Jahrhunderts)." In *Brandenburgische Geschichte*, edited by Ingo Materna and Wolfgang Ribbe, 85–168. Berlin, Akademie.
- Becker, Hartmuth (2002). *Die Kategorie öffentlicher Güter als Grundlage von Staatstheorie und Staatswissenschaft*. Berlin, Duncker & Humblot.

- Berendsen, Hendrik J. A., and Esther Stouthammer (2001). *Palaeographic Development of the Rhine-Meuse Delta*. Assen, Koninklijke Van Gorcum.
- Berghaus, Heinrich (1854). *Landbuch der Mark Brandenburg und des Markgrafthums Nieder-Lausitz in der Mitte des 19. Jahrhunderts*. Vol. 1. Brandenburg/Havel, Verlag Adolph Müller.
- Bochalli, Alfred, ed. (1913). *Die Wassergenossenschaften nach dem neuen preußischen Wassergesetze: Kommentar zum dritten Abschnitt des Wassergesetzes unter besonderer Berücksichtigung der wasserwirtschaftlichen Meliorationen mit den einschlägigen Ministerialerlassen*. Berlin, Parey.
- Boeselager, Elke Freifrau von (2003). "Sturmfluten an der norddeutschen Küste im Mittelalter—Erlebnis und Konsequenz." In *Natur im Mittelalter: Konzeptionen—Erfahrungen—Wirkungen. Akten des 9. Symposiums des Mediävistenverbandes*, edited by Peter Dilg, 227–242. Berlin, De Gruyter.
- Bohn, Robert (2006). *Geschichte Schleswig-Holsteins*. Munich, C. H. Beck.
- Boucher, Cyril T. G. (1963). *John Rennie, 1761–1821: The Life and Work of a Great Engineer*. Manchester, Manchester University Press.
- Bratring, Friedrich Wilhelm August (1968). *Statistisch-topographische Beschreibung der gesamten Marck Brandenburg*. Critically reviewed and improved new edition. Veröffentlichungen der Historischen Kommission zu Berlin 22. Berlin, De Gruyter.
- Campbell, Brian (2012). *Rivers and the Power of Ancient Rome*. Chapel Hill, University of North Carolina Press.
- Christiani, Walter (1855). *Das Oderbruch: Historische Skizze*. 2nd ed. Wriezen/Oder, E. Roeder.
- Dörr, Oliver (1995). *Die Inkorporation als Tatbestand der Staatensukzession*. Berlin, Dunker & Humblot.
- Egidius, Hans (2003). *Tod und Verderben an der Nordseeküste von Flandern bis Jütland*. Varel, CCV Concept Center.
- Ehlers, Paul, and Richard Winkel (1947). *Bau, Unterhaltung und Verteidigung der Flusssedimente*. 2nd ed. Berlin, Wilhelm Ernst & Sohn.
- Ey, Johannes (2005). "Früher Deichbau und Entwässerung im nordwestdeutschen Küstengebiet." In *Ruralia V: Water Management in Medieval Rural Economy*, edited by Jan Klápšte, Jean-Michel Poisson, and André Bazzana, Památky Archeologické, Supplementum 17, 146–151. Prag, Institute of Archaeology.
- Fossey, John M. (1991). "The City Archive at Koroneia." In *Studies in Boiotian Inscriptions*, edited by John M. Fossey, Epigraphica Boeotica 1:5–26. Amsterdam, Brill.
- Führ, Heinz-Bodo (1967). *Das Selbstverwaltungsrecht der Wasser- und Bodenverbände unter dem Einfluß staatlicher Finanzhilfen*. Berlin, Ernst-Reuter-Gesellschaft.
- Garcia, Xavier-François, and Martin Pusch (2002). "Ökologische Auswirkungen unterschiedlicher Verbauungsweise an Elbe, Loire und Garonne im Vergleich." In *Die Elbe—Neue Horizonte des Flussgebietsmanagements. 10. Magdeburger Gewässerseminar*, edited by Walter Geller et al., 305–306. Stuttgart, Leipzig and Wiesbaden, Teubner.
- Gasch, Robert, and Jochen Twele, eds. (2013). *Windkraftanlagen: Grundlagen, Entwurf, Planung und Betrieb*. Wiesbaden, Teubner.
- Géra, Eleonóra (n.d.). "Entwässerung von Sümpfen und Landnutzung in Ofen-Pest und seiner Umgebung im 18. Jahrhundert." In *Migration und Melioration in der*

- Habsburgermonarchie im Vergleich zu Preußen und anderen deutschen Staaten zwischen 1700 und 1850*, edited by Márta Fata.
- Gudermann, Rita (1999). "Zur Bedeutung der friederizianischen Landeskulturmaßnahmen—Mythos und Realität." In *Leben und Arbeiten auf märkischem Sand: Wege in die Gesellschaftsgeschichte Brandenburgs 1700–1914*, edited by Ralf Pröve and Bernd Kölling, 351–377. Bielefeld, Verlag für Regionalgeschichte.
- Harnisch, Hartmut (1996). "Preußisches Kantonsystem und ländliche Gesellschaft: Das Beispiel der mittleren Kammerdepartements." In *Krieg und Frieden: Militär und Gesellschaft in der frühen Neuzeit*, edited by Bernhard R. Kroener and Ralf Pröve, 137–165. Paderborn a. e., Schöningh.
- Hattenhauer, Hans, ed. (1996). *Allgemeines Landrecht für die preußischen Staaten von 1794*. 3rd expanded edition. Neuwied a. e., Luchterhand.
- Hofmeister, Adolf E. (1980). *Besiedlung und Verfassung der Stader Elbmarschen im Mittelalter*, Vol. 2, *Die Hollerkolonisation und die Landesgemeinden Land Kehdingen und Altes Land*. Veröffentlichungen des Instituts für Historische Landesforschung der Universität Göttingen 14. Hildesheim, Lax.
- Jäger, Helmut (1988). "Frühe Umwelten in Mitteleuropa." *Siedlungsforschung. Archäologie-Geschichte-Geographie* 6:9–24.
- Jakubowski-Tiessen, Manfred (1992). *Sturmflut 1717: Die Bewältigung einer Naturkatastrophe in der Frühen Neuzeit*. Munich, De Gruyter.
- Jakubowski-Tiessen, Martin (2009). "Naturkatastrophen: Was wurde aus ihnen gelernt?" In *Umweltgeschichte und Umweltzukunft: Zur gesellschaftlichen Relevanz einer jungen Disziplin*, edited by Patrick Masius, 173–186. Göttingen, Universitätsverlag Göttingen.
- Kaak, Heinrich (1991). *Die Gutsherrschaft: Theoriegeschichtliche Untersuchungen zum ostelbischen Agrarwesen*. Veröffentlichungen der Historischen Kommission zu Berlin 79. Berlin and New York, De Gruyter.
- (1995). "Vermittelte, selbsttätige und maternale Gutsherrschaft, Formen gutsherrlicher Durchsetzung, Behauptung und Gestaltung in Quilitz-Friedland im 18. Jahrhundert." In *Konflikt und Kontrolle in Gutsherrschaftsgesellschaften*, edited by Jan Peters, 54–117. Göttingen, Vandenhoeck & Ruprecht.
- (1999). "Brandenburgische Bauern im 18. Jahrhundert: Sozialgeschichtliche Untersuchungen in mikrohistorischer Perspektive." In *Leben und Arbeiten auf märkischem Sand: Wege in die Gesellschaftsgeschichte Brandenburgs, 1700–1914*, edited by Ralf Pröve and Bernd Kölling, 120–148. Bielefeld, Verlag für Regionalgeschichte.
- (2004a). "From Fishing Village to Farming Village: Quappendorf an der Oder in the Eighteenth Century." In *Modernisation and Tradition: European Local and Manorial Societies, 1500–1900*, edited by Kerstin Sundberg, Tomas Germundsson, and Kjell Hanssen, 222–242. Lund, Nordic Academic Press.
- (2004b). "Ländliche Bevölkerung zwischen Anpassung und Offensive: Wege der sozialen und wirtschaftlichen Behauptung von Dörfern im zentralen Oderbruch zwischen 1720 und 1850." *Zeitschrift für Agrargeschichte und Agrarsoziologie* 52: Themenband: *Agrarentwicklung im 18. und 19. Jahrhundert*: 84–101.
- (2010). *Eigenwillige Bauern, ehrgeizige Amtsmänner, distanzierte fürstliche Dorfherren: Vermittelte Herrschaft im brandenburgischen Alt-Quilitz im 17. und 18. Jahrhundert*. Berlin, Berliner Wissenschaftsverlag.

- (2012). *Korporative Gutsherrschaft und Agrarinnovationen in Preußen—der Johanniterorden auf seinen neumärkischen Ämtern 1750 bis 1811*. Berlin, Berliner Wissenschaftsverlag.
- Kaup, Martina (1994). “Die Urbarmachung des Oderbruchs: Umwelt-historische Annäherung an ein bekanntes Thema.” In *Umweltgeschichte—Methoden, Themen, Potentiale: Tagung des Hamburger Arbeitskreises für Umweltgeschichte*, edited by Günther Bayerl, Norman Fuchsloch, and Torsten Meyer, 111–133. Hamburg, Waxmann.
- Kluth, Winfried (1997). *Funktionale Selbstverwaltung: Verfassungsrechtlicher Status—verfassungsrechtlicher Schutz*. Tübingen, Mohr Siebeck.
- Knapp, Brian J. (1979). *Elements of Geographical Hydrology*. London, George Allen & Unwin.
- Knauss, Jost (1987). *Die Melioration des Kopaisbeckens durch die Minyer im 2. Jt. v. Chr. Generelle Forschungsergebnisse, 1985–1987*. Wasserbau und Siedlungsbedingungen im Altertum 2. Munich a. e., Technische Universität München.
- (1990). “Zur Datierung der Deukalionischen Flut in der Kopais.” *Teiresias* 20:19–25.
- Kniehase, Friedrich (1995). *Das Oderbruch: Slawische und deutsche Siedlungsgenese seit dem hohen Mittelalter*. Leverkusen, Verlag für geographische und historische Wissenschaften.
- Kouschil, Christa (2012). *Landesausbau in der Neumark unter Friedrich II. Bäuerliche Besitz- und Abhängigkeitsverhältnisse im unteren Warthebruch (18. Jahrhundert bis Mitte des 19. Jahrhunderts)*. Berlin, Edition Bodoni.
- Krämer, Rosemarie (1984). “Damm und Deich.” In *Reallexikon der germanischen Altertumskunde*, edited by Johannes Hoops and Heinrich Beck, Vol. 5, *Chronos-Dona*, 222–223. 2nd, rev. and expanded ed. Berlin and New York, De Gruyter.
- Krüger, Frank, and Marko Oelze (2014). “Das Deichbauprogramm an der Oder—der Praxistest 2010.” In *Vorsorgender und nachsorgender Hochwasserschutz: Ausgewählte Beiträge aus der Fachzeitschrift Wasser Wirtschaft*, edited by Stephan Heimerl and Heribert Meyer, 330–337. Wiesbaden, Springer Vieweg.
- Kühn, Hans Joachim (1992). *Anfänge des Deichbaus in Schleswig-Holstein*. Heide, Boyens Buchverlag.
- Ledyard, John O. (1995). “Public Goods: A Survey of Experimental Research.” In *The Handbook of Experimental Economics*, edited by John H. Kagel and Alvin E. Roth, 111–194. Princeton, Princeton University Press.
- Ludwig, Karl Heinz (1961). *Zur Besiedlung des Weichseldeltas durch die Mennoniten: Die Siedlungen der Mennoniten im Territorium der Stadt Elbing und in der Ökonomie Marienburg bis zur Übernahme der Gebiete durch Preußen 1772*. Marburg, J. G. Herder-Institut.
- Maissen, Anna Pia (2002). “Pferde, Schiffe und eiserne Träume: Die Verkehrsinfrastruktur Kroatiens in der zweiten Hälfte des 19. Jahrhunderts und die Rolle Baron Lazar Hellenbachs in der Eisenbahnfrage.” In *Wege der Kommunikation in der Geschichte Osteuropas*, edited by Nada Boškowska, Peter Collmer, Seraina Gilly, Rudolf Mumenthaler, and Christoph von Werth, 275–502. Cologne, Weimar, and Vienna, Böhlau.
- Melchers, Thorsten (2002). *Ostfriesland: Preußens atypische Provinz? Preußische Integrationspolitik im 18. Jahrhundert*. Thesis, University of Oldenburg.
- Mellmann, Johann Dietrich (1795). *Einleitung in das gemeine Damm = Deich = Siel = und Schleusen = Recht*. Altona and Leipzig, Kavensche Buchhandlung.
- Merck, Wilhelm (1962). *Deutsches Verwaltungsrecht*. Vol. 1. Berlin, Duncker & Humblot.
- Michor, Klaus (2014). “Die Obere Drau in Kärnten—ein Beispiel für Hochwasserschutz mit Mehrwert.” In *Vorsorgender und nachsorgender Hochwasserschutz: Ausgewählte*

- Zusammenstellung rund um das Thema Hochwasser*, edited by Stephan Heimerl and Heribert Meyer, 351–358. Wiesbaden, Springer Vieweg.
- Mohila, Peter, and Franz Michlmayr (1996). *Donauatlas Wien: Geschichte der Donauregulierung mit Karten und Plänen aus vier Jahrhunderten/Atlas of the Danube River Vienna: A History of River Training on Maps and Plans of four Centuries*. Vienna, Österreichischer Kunst- u. Kulturverlag.
- Müller, Christian (1813). *Sankt Petersburg: Ein Beitrag zur Geschichte unserer Zeit in Briefen von 1810, 1811 und 1812*. Mainz, Florian Kupferberg.
- Müller, Hans Heinrich (1981). “Domänen und Domänenpächter in Preußen im 18. Jahrhundert.” In *Moderne Preußische Geschichte 1648–1947: Eine Anthologie*, edited by Otto Büsch and Wolfgang Neugebauer, Veröffentlichungen der Historischen Kommission zu Berlin 52, vol. 1, 316–359. Berlin and New York, De Gruyter.
- Nawotki, Kathrin (2004). *Die schleswigsche Deichstavigerechtigkei: Vom 17. Jahrhundert bis in die Gegenwart: Eine gewohnheitsrechtliche Superfizies in nordfriesischen Deichgrundstücken und ihre Entwicklung*. Frankfurt/Main, Internationaler Verlag der Wissenschaften.
- Neugebauer, Wolfgang (1985). *Absolutistischer Staat und Schulwirklichkeit in Brandenburg-Preußen*. Introduction by Otto Büsch. Berlin, De Gruyter.
- (2009). “Die Krise des 17. Jahrhunderts in Brandenburg-Preußen.” In *Handbuch der preußischen Geschichte*, edited by Wolfgang Neugebauer and Frank Kleinhagenbrook, Vol. 1, *Das 17. und 18. Jahrhundert und Große Themen der Geschichte Preußens*, 145–178. Berlin and New York, De Gruyter.
- Neuhäusl, Robert, Jaroslav Moravec, and Zdenka Neuhäusl-Novotná (1965). *Vegetace CSSR: Synökologische Studien über Röhrichte, Wiesen und Auenwälder*, Vol. A1. Prague, Československá Akademie Věd.
- Peters, Jan (1989). “Historische Einführung: Neuholland von den Anfängen bis zur Mitte des 18. Jahrhunderts.” In *Märkische Bauernstagebücher des 18. und 19. Jahrhunderts: Selbstzeugnisse von Milchviehbauern aus Neuholland*, edited by Jan Peters, Hartmut Harnisch, and Lieselott Enders, 18–80. Weimar, Böhlau.
- Peters, Klaas-Heinrich (2005). “Organisation des Küstenschutzes und Wandel des Deichrechts von den Anfängen bis zur Gegenwart.” In *Ostfriesland und das Land Oldenburg im Schutz der Deiche*, edited by Christoph Ohlig, Schriften der Deutschen Wasserhistorischen Gesellschaft 6, 25–30. Siegburg, Books on Demand.
- Porter, Dale H. (1998). *The Thames Embankment: Environment, Technology, and Society in Victorian London*. Akron, OH, University of Akron Press.
- Rippon, Stephen, and Nigel Cameron (2006). *Landscape, Community and Colonisation: The North Somerset Levels during the 1st to 2nd millennia AD*. York, Council for British Archaeology.
- Rönne, Ludwig von (1863). *Das Staats = Recht der Preußischen Monarchie*. Vol. 2, pt. 2. Leipzig, Brockhaus.
- Schmidt, Martin (2000). *Hochwasser und Hochwasserschutz in Deutschland vor 1850: Eine Auswertung alter Quellen und Karten*. Munich, Oldenbourg.
- Schulze, Hermann (1890). *Das Preussische Staatsrecht auf Grundlage des deutschen Staatsrechts*. Vol. 2. Leipzig, Breitkopf & Härtel.
- Spiegelberg, Karl (2001). *Das Oderstromsystem: Eine Dokumentation*. Frankfurt an der Oder, N. O. Agentur Neue Odersche Verlags- und Medien-GmbH.

- Stier, Hans-Erich, ed. (1957). *Völker, Staaten und Kulturen: Ein Kartenwerk zur Geschichte*. Berlin, Georg Westermann.
- Szűcs, Linda (2010). "Auenbewirtschaftungsformen an der Theiß." In *Schauplätze und Themen der Umweltgeschichte: Umwelthistorische Miszellen aus dem Graduiertenkolleg. Werkstattbericht*, edited by Bernd Herrmann and Ulrike Kruse, 237-249. Göttingen, Universitätsverlag Göttingen.
- Tittizer, Thomas, and Falk Krebs, eds. (1996). *Ökosystemforschung: Der Rhein und seine Auen: Eine Bilanz*. Berlin and Heidelberg, Springer.
- Tols, Richard S. J., and Andreas Langen (2000), "A Concise History of Dutch River Floods." *Climatic Change* 46:357-369.
- Urban, William L. (1991). *Dithmarschen: A Medieval Peasant Republic*. Lewiston, ME, Edwin Mellen Press.
- Vetter, Klaus (1996). *Zwischen Dorf und Stadt—die Mediatstädte des kurmärkischen Kreises Lebus: Verfassung, Wirtschaft und Sozialstruktur im 17. und 18. Jahrhundert*. Weimar, Böhlau.
- Wentz, Gottfried (1930). "Geschichte des Oderbruchs." In *Das Oderbruch*, vol. 1, edited by Peter Fritz Mengel, 85-238. Eberswalde, Verlagsgesellschaft R. Müller m. b. H.
- Winkander, Charlotte (2000). "Canals." In *Handbook of Ancient Water Technology, Technology and Change in History 2*, edited by Örjan Wikander, 321-330. Leiden a. e., Brill.
- Winkelmann, Jan (2011). *Die Mark Brandenburg des 14. Jahrhunderts: Markgräfliche Herrschaft zwischen räumlicher "Ferne" und politischer "Krise"*. Studien zur brandenburgischen und vergleichenden Landesgeschichte 5. Berlin, Lukas.

SOURCES

- ALZ (Allgemeine Literatur-Zeitung vom Jahre 1808), vol. 2, Halle-Leipzig, 1808, "Num. 219. Allgemeine Literatur-Zeitung, Mittwochs, den 27. Julius 1808," col. 729-736.
- CBLLG (Chur = Braunschweig = Lüneburgischer Landes = Ordnungen und Gesetze), Lüneburg, 1744, Cap. VIII, Sectio 4: Von Teich = Sachen, "Nr. LXXII. Fürstliche Braunschweig-Lüneburgische Teich = Ordnung, wornach sich die Unterthanen an der Elbe zu achten de 1664," 189-195.
- CCM (Corpus Constitutionum Marchicarum), edited by Christian Otto Mylius, Berlin-Halle, 1737-1755.
- Part IV, 2nd Section, IV Cap., "No. VIII. Neu = revidirte und confirmirte Teich = Ordnung in der Alten = Marck, zu sambt denen Teich = Rollen in beyden Schauen. Vom 20. Decembr. 1695," cc. 255-286.
- Part IV, 2nd Section, IV Cap., "No. XVII. Teich = und Ufer = Ordnung. Vom 30. Decembr. Anno 1716," cc. 293-304.
- Part IV, 2nd Section, IV Cap., "No. XVIII. Sr. Königl. Majest. in Preussen, und Churfürstl. Durchl. zu Brandenburg, etc. Teich = und Ufer = Ordnung, in der Lebusischen Niederung an der Oder. De dato den 23. Junii 1717," cc. 303-340.
- Part VI, Nachlese, "No. XVIII. Graben = und Schau = Ordnung über das im Havelländischen Creyse belegene Nauensche Luch, de dato Berlin, den 31ten Augusti 1724" cc. 69-74.
- CSVV (Chronologische Sammlung der im Jahre 1800 ergangenen Verordnungen und Verfügungen für die Herzogthümer Schleswig und Holstein, die Herrschaft Pinneberg, Graffschaft Ranzau und Stadt Altona), Kiel, 1801, "Nr. 5. Patent, betreffend die

- einzuführende Aufsicht über die Deiche der sämtlichen Marsch-Commünen, adlichen Marschgüter und octroyierte Koege in den Herzogthümern,” 4-9.
- DOHB* (Deich = Ordnung für das Herzogthum Bremen, wie dieselbe in verschiedenen Stücken geändert und verbessert worden, publiciret Stade, den 29. Julii 1743), Stade, 1852, “Cap. 16. Von Strafe derer, so mit bösem Vorsatz die Deiche durchstechen oder sonst beschädigen,” 83-84.
- GSPS* (Gesetz = Sammlung für die Königlichen Preußischen Staaten), Berlin, 1848, “Nr. 2933. Gesetz über das Deichwesen. Vom 28. Januar 1848,” 54-60.
- JbSPS* (Jahrbuch für die amtliche Statistik des preussischen Staats), vol. 3, edited by Königliches Statistisches Bureau, Berlin, 1869, Belastung und Entlastung des Grundeigentums, “B. Die Landesmeliorationen und ihr Schuldenwesen,” 79-82.
- MGH* (Monumenta Germaniae Historica: Capitularia regum Francorum), 2 vols., edited by Alfred Boretius and Viktor Krause, Hanover, Hahn, 1883-1897, vol. 1, “Nr. 148. Capitula Missorum. 821,” 300-301.
- NCC* (Novum Corpus Constitutionum Prussico-Marchicarum), edited by Samuel von Cocceji, Berlin, 1753-1822.
- Vol. IV, 1769, “No. 7. Königlich Preußische Teich = und Ufer = auch Graben = und Weg = Ordnung in dem auf beyden Seiten der Oder, zwischen Zellin und Oderberg belegenen neu bewalleten und urbar gemachten Nieder = Bruch. De Dato Berlin, den 23. Jan. 1769,” cc. 5121-5334.
- Vol. VI, 1779, “No. XLII. Deich = Ufer und Graben = Ordnung für das Ober = und Nieder = Netz = Bruch. De Dato Berlin, den 14. December 1779,” cc. 1631-1692.
- Vol. XI, 1802, “No. XX. Deich = Ufer = Graben = und Schau = Ordnung für das Warthe = Bruch. De Dato Berlin, den 27sten März 1802,” cc. 785-838.
- PrALR* (Das Allgemeine Landrecht für die Preussischen Staaten), vol. 1, Sachen-Recht, edited by Carl Wilhelm Zimmermann, Berlin, 1850, Part II., tit. XX, 17th Section, “§. 1585. Von vorsätzlich verursachten Ueberschwemmungen,” 1089-1090.
- SSp* (Repgow, Eike von, Der Sachsenspiegel, niederdeutsches Rechtsbuch, 1220-1235), liber secundus.