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A resilient future for the Vistula Delta landscape

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Colophon

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The following report is the outcome of a 5-month long research internship at the Cultural Heritage Agency of the Netherlands (RCE). As the internship took place in the first half of 2021, it was done in a fully remote setting, meaning the report is based primarily on desk research. The motivation for this research was the historical connection between the Vistula Delta landscape and the Netherlands as well as the unique hydrotechnical heritage that exists there today which is to a great extent

a result of this connection. This research was also made possible due to changes to the RCE policy on International Heritage Cooperation, which now names Poland as a potential partner country. The main goal of the project was to assess the current state of the landscape and envision what a potential future for it might look like. This report is by no means exhaustive and is meant to be a starting point for further research and international cooperation on this topic.

Introduction

Żuławy Wislane in the delta of Vistula in northern Poland is a region unlike any other in the country; this unique landscape, with its extensive network of canals, dikes and other elements of water infrastructure, brings to mind the image of Dutch agricultural lands – rationally structured and artificially created – more so than it does of the typically chaotic Polish countryside that can be encountered elsewhere in the country. Such a comparison is entirely valid – not merely because of the aesthetic and spatial similarities, but because the landscape of Żuławy had been, in fact, heavily influenced by the Dutch. While this landscape may appear serene to the observer today, behind it is a rich, tumultuous, and at times violent history. The complex biography of Żuławy consists of the people, the events, and the processes, which shaped its development and ultimately contributed to what it is today – a distinct life world, “the dwelt-in world of people and other animals and actors who co-create this world while living together” (Kolen and Renes 30). In this chapter, I will focus specifically on the genesis of the Żuławy landscape, attempting to highlight that which may not be immediately visible, but is nonetheless important to understanding it fully as a palimpsest.

If landscape is understood “at each point in time as the interim outcome of a long-standing and complex interplay between agency, structure and process” (Kolen & Renes 28) then it becomes clear that in order to fully grasp its meanings it is important to consider all of its historical layers and their various aspects. Although certain layers may ultimately appear to be less important than others to the general development of a given landscape, as is certainly the case when it comes to Żuławy, they can still unveil important structures, processes, and actors and thus warrant critical attention. Importantly, the biography of a landscape can rarely ever be conceptualized as teleological or rational – instead, landscapes “have their own temporalities and rhythms, in relation to but distinct from individual human life cycles” (Kolen & Renes 38). The landscape of Żuławy today, as I will showcase, is hardly a logical outcome of its historical evolution; instead, its life history is full of major shifts and interruptions.

Prehistory and Ancient History

The first distinctly visible historical layer in Żuławy’s biography is a vertical one – namely, archeological evidence of periodic settlement in the Vistula delta dating

as far back as the Neolithic age. During the time of the Roman empire, a number of inhabited settlements was present in the delta – more precisely, on elevated terrain and islands in the wetlands of Vistula (Szalygin, “Historia Żuław”); moreover, these settlements maintained an active trade relationship with Roman merchants, who visited the area to purchase amber (Szalygin, “Historia Żuław”). Albeit information regarding this layer is hardly complete, I can surmise that Żuławy had, already in that period, been a sort of relational center. The relations engendered by this landscape include not only the social kind (i.e. between merchants and local inhabitants), but also between human actors and nature. The latter seem to be especially significant here as they already show the level of complexity at play in this landscape. The geographical position of settlements in this period reveal that nature had already acted as a kind of a double-edged sword: on one hand, the proximity to the Baltic Sea and the abundance of freshwater from the Vistula river made Żuławy an attractive location for settlements; on the other hand, those very same features represented danger and thus required adaptation from the settlers. Furthermore, even the social relations with Roman merchants would not have developed in this specific way had it not been for nature – after all, the abundance of amber quarries around the coast of the Baltic Sea remains extremely important even today.

Nature in Żuławy, therefore, had already acted as an interface which helped shape the social and spatial structures and processes at the time. Coincidentally, the landscape can also be seen as a reflection of the wider processes taking place during this time, e.g. the transition of human cultures from nomadic to sedentary lifestyles (Neolithic Revolution) or the development of global trade relations during the time of the Roman Empire. These considerations reveal that the role of Żuławy had already been dynamic in one of its earliest historical layers, supporting the claim that landscapes are not “innocent”, but always play an active role in the emergence of social structures (Riesenweber 30-31).

Early Medieval Times – Truso and Gdansk

The subsequent historical layer in Żuławy’s landscape is also mainly archeological and can be somewhat symbolically marked by the founding of Truso at the end of the 7th century, a Scandinavian settlement located on the banks of the river Nogat (an estuary of Vistula) near the present-day Druzno Lake (Fig. 1, Fig. 2). The town was first documented by the merchant Wulfstan of Heddeby in the 880s, who described it as a prominent trade center



Figure 1 - Location of Truso on a contemporary map of the Vistula delta (OpenStreetMap)



Figure 2 - Location and range of Truso on a contemporary map of the area around the Lake Druzno nature reserve (OpenStreetMap)

(Bogucki 112-113). Truso was a so-called emporium – a type of Viking Age coastal settlement which functioned as a “centre of production, trade, and service for merchants and travelers” (Bogucki 100-101). The emporium was a critical supplier and manufacturer of amber as well as various tools made from metals and animal bones, granting it international importance (Jagodziński 203-204). Crucially, Truso was located at the border between the lands occupied by Prussian and Slavic tribes, cementing itself and the surrounding landscape as a prominent arena for cultural exchange between the different groups.

Thus, there is a certain continuity between the role of the landscape in this layer and the one I considered in the previous section – once again, Żuławy had functioned as a center of emergence of social and cultural relations and structures. Importantly, this function was still made possible to a great extent (perhaps even greater than before) by nature and natural resources; the location of Truso was not only a crossroads of trade routes and societies, but also provided natural protection that was essential for emporiums (Bogucki 101). At this point, it is also valuable to begin considering the impact of human activity on the nature of this landscape; while delta



Figure 3 - Present-day view of Truso's location (Google, CNES/Airbus, MGPP Aero, Maxar Technologies)

ecosystems are generally not very diverse or resilient, various flora (forests and meadows) and fauna (mainly in water) flourished in Żuławy at the time (Bartman 66). The intensification of trade activity at this time might have led to a more significant impact on the environment. This is not to say that humans were destroying the “wilderness” of Żuławy; instead, I wish to point out that this historical layer may have been the one in which human actors gained more prominence in this landscape.

The powerful position of Truso lasted relatively long, but rapidly declined mid-10th century, around the time Gdansk was founded (Szalygin, “Historia Żuław”); while the exact causes of this decline are not known, a plausible theory is that a new political power (possibly of Piast origin) emerged and destroyed Truso in an attempt to control the delta and its trade capacities (Bogucki 114). As the relevance of Truso faded (Fig. 3), Gdansk soon overtook its position as the main settlement and commercial center of the region (Bogucki 114). While Gdansk itself is generally not considered a part of Żuławy, its influence simply cannot be overlooked. As the biggest urban center in the area, Gdansk had greatly affected the development of Żuławy and continues to do so even today and thus will be a theme in the following sections. It is also during this time that more settlements began appearing in the estuaries of Vistula (Szalygin, “Historia Żuław”). The appearance of Gdansk in the biography of Żuławy shows the importance of examining the issue of authorship throughout my analysis of this landscape; already at this point in history, Żuławy had been shaped by various human (craftsmen, merchants, nobility) and non-human (topography, natural resources, fauna,

natural disasters) actors, a range that will only increase in size and diversity as I delve deeper into the topic.

The Teutonic Order and Żuławy at the Height of Medieval Times

The next intelligible layer in Żuławy's biography is quite unique as it is perhaps the first one that coincides with a distinct “turning point” in history and whose traces are still extremely visible today in many ways – namely, the invitation of the Teutonic Order to Poland in 1226 by Duke Konrad I of Mazovia. While the Teutonic knights were initially invited merely to protect Piast properties and support the process of Christianization of the Prussian tribes, they soon began conquering Prussian lands in order to establish their own autonomous state. To secure economic and political stability, the Order needed to control the Vistula delta, which was realized in 1308 when Gdansk, Tczew, and other settlements in the area were conquered (Szalygin, “Historia Żuław”). The geopolitical importance of Żuławy, already clear earlier, was cemented even further when the Teutonic Order moved its capital from Venice to Malbork in 1309; as a result of this, Żuławy was now a literal convergence point between 3 major economic and political centers: Gdansk, Malbork, and Elblag. These cities require attention here as they represent how Żuławy's historical layers can function both as palimpsests and layers of meaning; this is especially visible in Malbork, whose subsequent development directly interacted with its past of being a



Figure 4 - The Teutonic castle in Malbork today (Gregy, Wikimedia Commons)

Teutonic fortress. The castle itself has fulfilled different functions throughout the centuries: first as the headquarters of the Order, then as a residence for Polish kings, officials, and institutions, as a military object during the Napoleonic wars, as a place of reverence and a blueprint for Nazis during WWII (Shirer 255-256), to the internationally recognized heritage item and tourist destination that it is today (Fig. 4).

During the period of Teutonic reign, Żuławy was also administratively divided for the first time in history (Szalygin, "Historia Żuław"); while the subdivisions developed then correspond only in part to the ones that are there today, this process still marks a clear instance of the institutionalization of this landscape. Żuławy became an element of a political and administrative framework – a structure, which developed as a combination of the specifics of the landscape itself and the wider processes and events taking place at the time. Crucially, the placement in this institutional framework was not only limited to the introduction of abstract and socially constructed subdivisions but resulted in a very tangible imprint on the landscape of Żuławy. The Teutonic Order began an intensive wave of settling in Żuławy in the 14th century and founded dozens of new municipalities based on Kulm law, which established rules of land inheritance and various forms of local governance (Szalygin, "Historia Żuław"). These newly created communities were largely composed of serfs who made use of the fertile soil and developed the land (Kizik 31). The Teutonic Order benefitted from this process via feudal rents (Szalygin, "Historia Żuław") and established robust religious



Figure 5 - Ruins of a 14th century gothic church built by the Order in the present-day village of Streblewo (Polimerek, Wikimedia Commons)

structures in the area (Kizik 31) (Fig. 5). Thus, Żuławy gained a distinctly agricultural character and became closely linked to Christianity – layers of meaning which are very much present and visible in this landscape today.

Furthermore, human intervention into this landscape at this time also took on an infrastructural character as first dikes to prevent floods were constructed (Szalygin, "Historia Żuław"). Technology, then, became yet another element involved in the authorship of Żuławy not only by shaping it materially, but also by generating new social structures and embedding new values in local culture: councils were established to build, oversee, and maintain water infrastructure – a process, which soon became a significant part of life in Żuławy's countryside (Szalygin, "Historia Żuław"). Finally, in this layer Żuławy can already be thought of as a concrete manifestation of ideology,

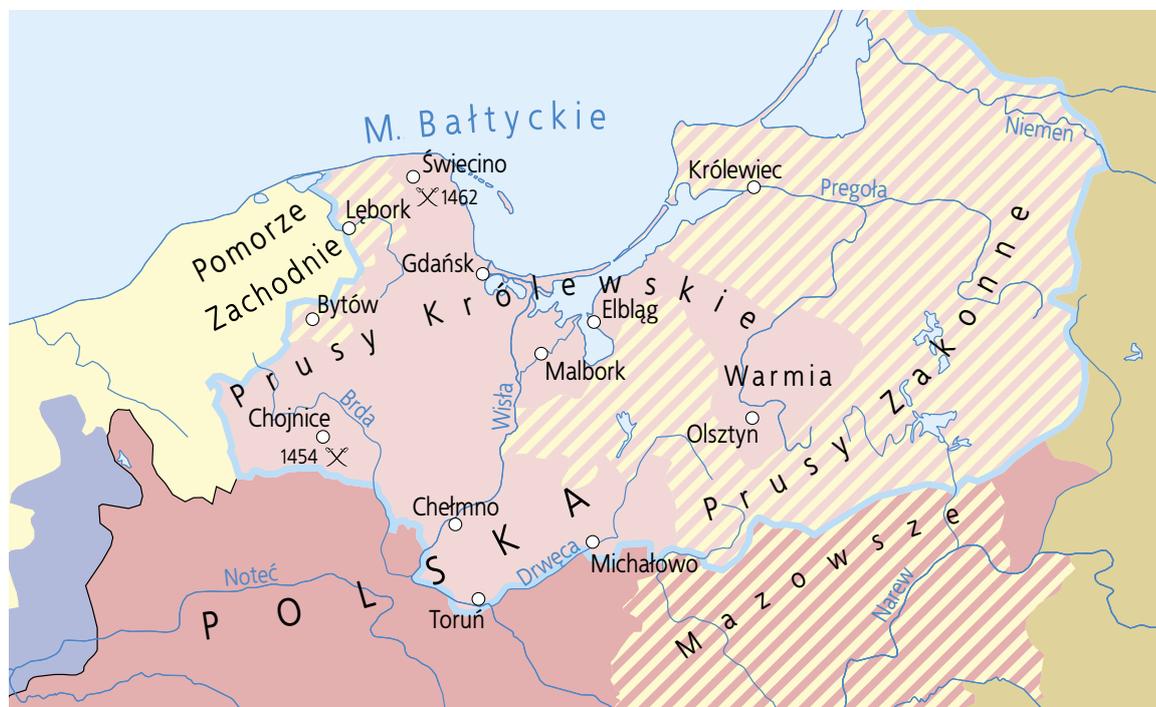


Figure 6 - The Second Peace of Thorn, territories gained directly by the Polish Crown shown in pink (Mapy Online, Gdańskie Wydawnictwo Oświatowe)

“constantly communicating and reinforcing power relations” (Riesenweber 27): the ideologies expressed in the landscape of this time were that of militant Christianity and feudalism. The former legitimized and justified the violent conquest, enslavement, and conversion of the Pagan tribes, which previously occupied the region; the latter did so with the exploitation of serfs that formed the basis of feudal societies.

The Teutonic reign over Żuławy came to an end in 1466 with the end of the Thirteen Years’ War and the resulting Second Peace of Thorn incorporating it into the Polish Crown (Fig. 6). This violent change in ownership was reflected in the landscape, which was often the battleground in the numerous Teutonic-Polish conflicts up to the 1st half of the 16th century. As a result of these wars as well as destructive floods Żuławy suffered economically and socially during that time (Klassen 18) and were in dire need of revitalization. As part of the strategy for economic recovery in the region, settlers from the Netherlands were brought in to settle in locations previously inaccessible or unsuitable for economic activity (Targowski 11). The arrival of Dutch settlers in Żuławy marks what is likely the most significant shift in the authorship of this landscape – the effects of that shift, as I will highlight in the following sections, have to a great extent determined the development of Żuławy.

Renaissance and Dutch Migration

The first wave of Dutch migration to Żuławy started in the 2nd half of the 16th century and lasted until the 1st half of the 17th century; during this time, the settlers came mostly from Frisia and Flanders. This migration was the result of a combination of a few ‘push’ and ‘pull’ factors, which require attention to fully grasp the complexity of this process. Most of the settlers were Mennonites – followers of a pacifist anabaptist church established by the former Catholic priest Menno Simmons – and faced increasing religious persecution in the Netherlands, which was at the time under repressive Spanish rule. Most of the sources I examined claim that in order to keep their faith, the Mennonites as well as some Dutch Lutherans (Targowski 13) decided to flee to Poland, which as a multireligious country had a relatively high level of religious tolerance. This tolerance was enshrined in law as religious freedom when the Warsaw Confederation was signed in 1573, cementing the Polish-Lithuanian Commonwealth as a destination for those seeking religious refuge. Additionally, the close trade relations between Gdańsk – which was a major city of the Hanseatic League at the time – and various Dutch ports made this migration more feasible and logical (Targowski 11). These factors, together with the fact that Poland, as a major exporter of wood and

agricultural products to Western Europe, was experiencing a period of economic growth (Kizik 27-28) made this destination attractive for the Dutch settlers.

Importantly, the invitation of Dutch settlers to Żuławy during that time was hardly a philanthropic impulse; instead, the primary motivation on the Polish side were the expected economic benefits of such a migration. As Żuławy was already a very profitable agricultural landscape due to its fertile soil, landowners in the area (nobility, cities, the church) wanted to expand the arable land to benefit even more from it (Szałygin, "Historia Żuław"). However, as the landscape faced a shortage of labor force and was frequently destroyed by floods, it required extensive knowledge and labor to be brought into a state of usability. Thus, the Dutch, already famous for their experience and knowledge in farming and dealing with difficult landscapes and water challenges, were greatly desired in Żuławy ("Krajobrazy" 31). The settlers were almost always placed on shores, lowlands, or wetlands – areas considered impossible to be economically utilized. The activity of the settlers was almost exclusively agricultural, initially concentrated on orchards and cattle farming, and was more efficient, innovative, and better organized than that of local serfs ("Krajobrazy" 31). The settlers were tasked with transforming and then maintaining the landscape through activities such as draining swamps, forest clearing and construction of water infrastructure elements (dikes, canals, etc.). In return, they were granted relative freedom and beneficial terms of land usage based on a unique legal structure – a very important aspect that I will take up in the next section. This arrangement, in which the landscape of Żuławy acted as both facilitator and interface, was seemingly beneficial to both parties and resulted in a major success; the settlers (the Mennonites in particular) were able to practice their culture and religion while landowners saw massive economic gains, in many cases tripling or even quadrupling income from rents (Targowski 12). The landscape, then, gave rise to a new socioeconomic structure, which not only enriched the cultural fabric of the region but reshaped the tangible landscape itself.

Oleder Settlers and the Nature-Culture Relationship

The Dutch settlers to Żuławy enjoyed a unique legal status for a rural group in the Polish-Lithuanian Commonwealth, a result of the specific form of contracts which they signed with local landlords. These contracts were based on the so-called "perpetual usufruct" – a decades-long land lease,

which allowed the settlers to occupy the land for multiple generations in exchange for a one-time payment to the landlord and a yearly rent based on the size of the land (Targowski 17). As the settlers or their descendants were given priority when it came to extending the contracts, the continuity of both the tangible landscape and the culture that emerged there was ensured (Targowski 17). Furthermore, the settlers were given an exceptional amount of personal freedom: they were not considered serfs and could leave their villages as they pleased without needing permission from the landlord; they were given the right to rule on minor offences in their communities; they were allowed to manage the land they occupied and the real estate on it and were sometimes (depending on the municipality) able to sell parts of it, only needing to pay commission (Targowski 18). The settlers could usually sell the goods they produced in villages and city markets, which ensured their ability to pay rents (Targowski 19); finally, they were able to freely practice religion (this right was restricted in church-owned lands), build churches and schools, which guaranteed the possibility of knowledge transfer and resistance to polonization (Targowski 20). This distinct legal status resulted in the creation of tightly knit, culturally distinct localities with robust structures of local governance and a strong sense of community centered around the common struggle against the challenges brought forth by the landscape (Targowski 20-23). Based on the association with Dutch settlers, this legal structure generated by the landscape was named "Oleder" law, a word very closely related to the present-day Polish word "Holender" meaning Dutchman. The term soon lost its association with the Dutch and served only as an indication of the legal framework; The term "Oleder settlers" will be useful to describe the settlers who moved to Żuławy based on this legal structure but were not necessarily of Dutch origin.

The effects of this shift in authorship in this historical layer, were (and still are, to some extent) visible both in the geographical layer of this landscape – in its polder-based, neatly divided structure – and in the architecture (farmhouses, windmills, religious structures) and rural planning (Zeilendorfs) of the Dutch settlements which bear significant traces of the settlers' culture (Szałygin 32) (Fig. 7). Furthermore, this layer is the primary point of reference for today's notion of heritage in Żuławy, making it even more significant. Both the effects and the causes of this shift show that the life history of Żuławy is heavily influenced by an uneasy and dynamic relationship between nature and culture; almost every layer in the biography of this landscape is an expression of this relationship. This relationship, however, should not be considered in binary terms of "human versus nature"; while the activities of the Dutch settlers were clear

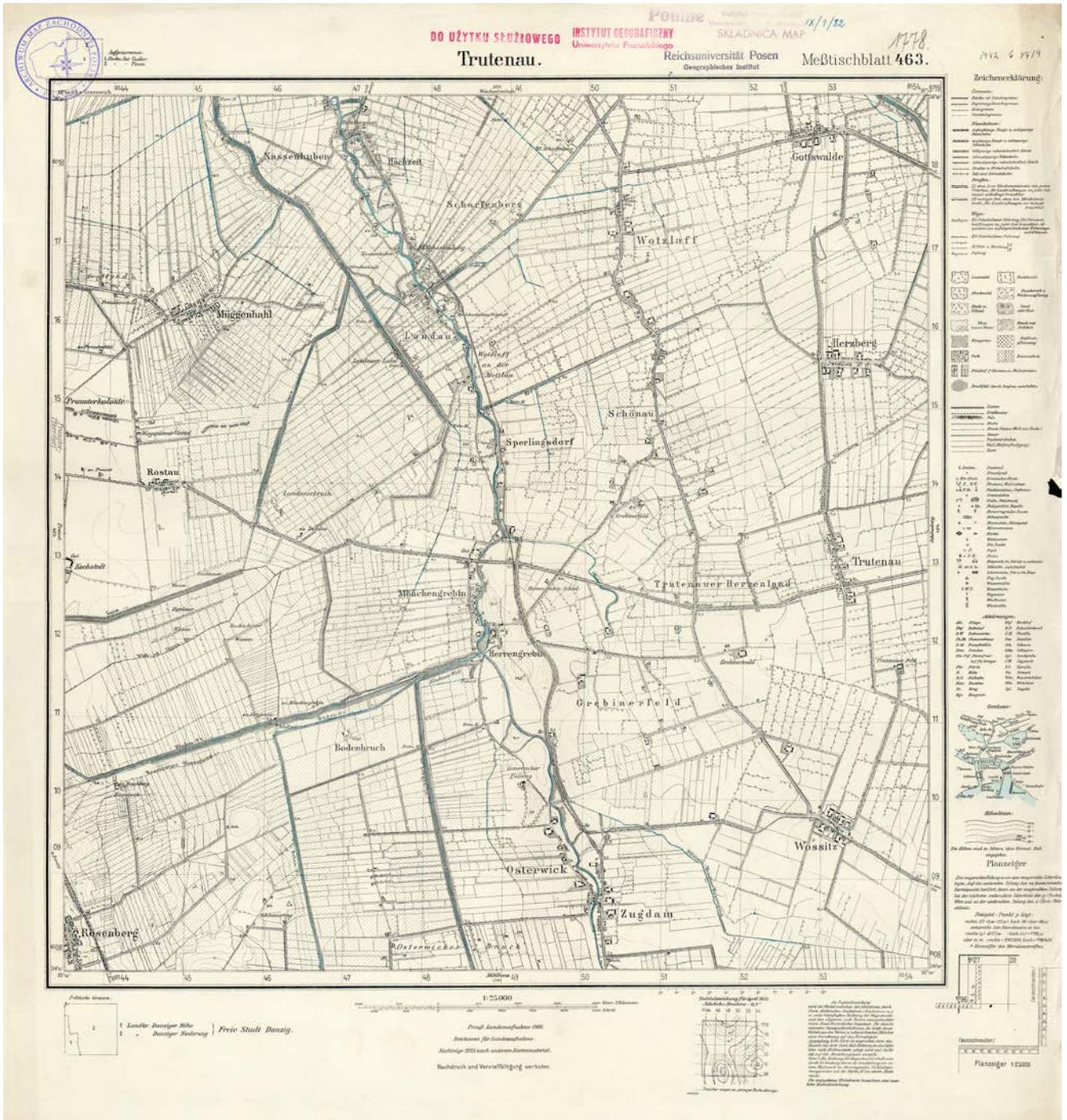


Figure 7 - Zeilendorf layout of the Oler village of Trutnowo on a German map from 1925 (Archiwum Map Zachodniej Polski)

attempts to either harness nature or gain mastery over it, this process could never be complete. Although the settlers did struggle against nature in a sense, they did so by creating a different form of nature and by still leaving space for “wild” nature to develop (Bartman 66); this process not only created an additional tension between the nature that is usually perceived as “wild” (e.g. rainfall,

floods, the sea) and the nature that is “manufactured” (e.g. canals, dikes) but effectively disrupted the nature-culture binary. The sense of tranquility and harmony, which Żuławy seems to project even to experts of today is quickly betrayed as illusory and superficial upon a closer look; this is only supported by the perpetual vulnerability in which Żuławy remains until today.



Figure 8- the 1st Partition of the PLC (Maciej Szczepańczyk, Wikimedia Commons)

This layer of Żuławy's history, marked largely by growth and development, came to an end in the 2nd half of the 17th century as Poland engaged in various conflicts with Cossacks, Swedes, and Russians (Kizik 28). While all these conflicts contributed to the country no longer being an attractive migration destination due to the resulting economic decline, the wars with Sweden were particularly devastating to Żuławy as many settlements were abandoned, plundered, or destroyed (Szalygin, "Historia Żuławy"). The landscape then experienced a brief renaissance in the 18th century with a second wave of Oleder settlers, this time mostly of German and Polish origin (Targowski 14). After this period of relative stability, during which both the new and old settlers engaged in the development of agriculture, the landscape yet again experienced a radical change in ownership as it was incorporated into Prussia following the first partition of Poland in 1772 (Fig. 8).

Żuławy under Prussia and Germany in 19th-20th century

The period of Prussian (and then German) reign over Żuławy resulted in an interesting split between the landscape itself and some of its most impactful authors – the descendants of the mainly Mennonite Dutch settlers. While initially some efforts were made to preserve the privileges Mennonites (and other Oleder settlers) enjoyed under Polish rule, their rights were gradually restricted as it became apparent that their position was incompatible with the policies of Prussia. The refusal of Mennonites to serve in the military, even as support staff, was a pivotal element of this conflict as the military was of incredible importance to the Prussian state. Unable to retain their religious freedom, many

Mennonites accepted the invitation of Catherine II to settle on Russian lands, leaving behind the landscape which they and their ancestors had shaped; the settlements, which were left behind were taken over by people of other ethnicities and religions, fundamentally changing the social structure of the landscape (Targowski 15). The unique legal position of Oleder settlers was soon completely dismantled when Prussia granted serfs land rights and introduced a series of administrative reforms in 1811; additionally, the central planning policies of the Prussian state stood in direct opposition to the generally bottom-up development of Oleder settlers (Targowski 15). Although such a disruptive shift in character and authorship might be expected to result in the deterioration of this landscape, in reality it was quite the opposite; under Prussian/German rule and during the interwar period partly as the Free City of Danzig, Żuławy underwent intense agricultural development (Bartman 74). Contemporary technology (combustion engine, electric energy) was introduced, irrigation modernized, the farmed crops and animals greatly diversified (Bartman 74). Through the combining of traditional knowledge, the legacy of Oleder settlers, and modern forms of agricultural management, Żuławy was again brought into a period of economic abundance which would last roughly until World War II (Bartman 74-75). This chapter of history showcases the flexibility of Żuławy— even under drastically different sociopolitical, administrative, and cultural circumstances it was able to thrive as an agricultural landscape.

Żuławy in World War II and Post-War Poland

During World War II, Żuławy became marked by unparalleled destruction and violence. In 1939, the Nazis established the Stutthof prison camp near the town of Sztutowo. Initially, the camp was part of the project to ethnically cleanse the area and eliminate Polish elites (“Oboz koncentracyjny”), but it was subsequently massively expanded (Fig. 9). In 1941, it became a labor camp similar to the one in Dachau and its prisoners were used as forced labor in factories, agriculture, and construction of water infrastructure in Żuławy. Stutthof became a concentration camp in 1942 and eventually became an entire network of subcamps (Fig 10). In total, the Stutthof camp had some 110000 inmates, of which around 65000 were killed as a result of direct murder, horrible sanitary and labor conditions, starvation and forced evacuations of the camp at the end of the war (so-called Death Marches) (“Oboz koncentracyjny”). In addition to being the site of genocide and exploitation, the landscape itself also suffered a great deal of destruction. The ravaging of Żuławy during this time culminated in 1945 when the Nazis intentionally damaged floodwalls in the area, leading to a massive flood (Szalygin, “Historia Żuław”); for a photograph of the destroyed landscape, see page 15 of “Poradnik”.

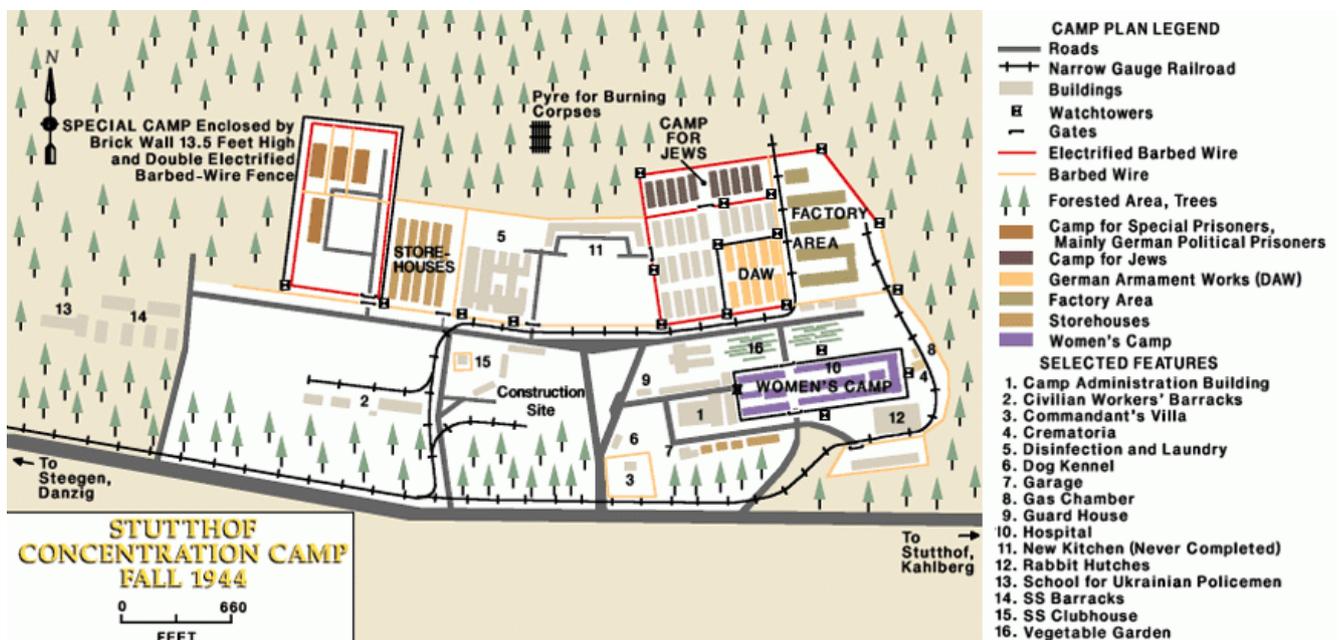


Figure 9 - Stutthof in 1944 (US Holocaust Memorial Museum)

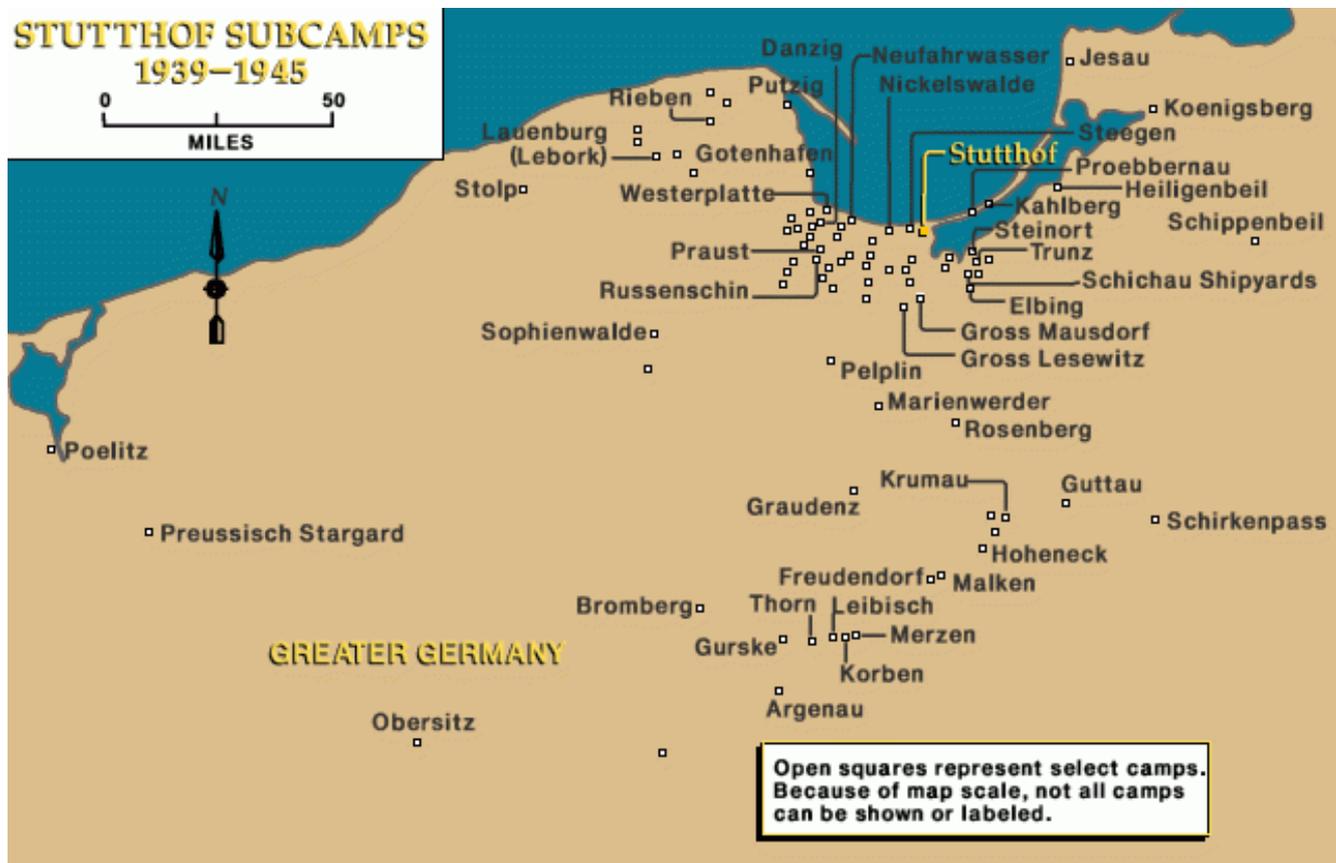


Figure 10 - Stutthof camp network (US Holocaust Memorial Museum)

This dark page in Żuławy's life history was followed by another destructive period and a violent change in authorship and ownership, although certainly not as extreme as World War II. Many of the German inhabitants of the area fled in 1945 fearing the approach of the Red Army (Kizik 48-49), and the rest were displaced after the war when it became part of the newly established Polish state. The new landowners, who were (often forcibly) moved to Żuławy from the Eastern Borderlands were of many different cultures and ethnicities and experienced significant social and cultural pressure in what was essentially a foreign environment (Paprot-Wielopolska 306). The new inhabitants were not equipped with the knowledge and experience necessary to continue the agricultural tradition of Żuławy and did not have a personal connection with Żuławy, which in turn led to a disruption of the historical character of this landscape: elements of water infrastructure were neglected or destroyed, the structure of fields and villages drastically altered, historical architecture destroyed, new developments were undertaken with no consideration for heritage (Bartman 68-69). Crucially, this significant disruption during the post-war years was a clear expression of the ideology and policies of the

communist Polish People's Republic and not a necessary outcome (Bartman 69); the PPR did not see Żuławy as truly "Polish" heritage and it did not fit into its project of national identity-building (Paprot-Wielopolska 306). The ideological and systemic contempt for this landscape translated not only into the destruction of its heritage but also the suppression of its multicultural history and regional identities (Paprot-Wielopolska 306-307). The agricultural policy of the PPR, which relied on large-scale, state-owned agricultural enterprises (PGR) was in direct contradiction to the bottom-up agricultural structure that previously shaped Żuławy and kept its new inhabitants in systemic poverty (Kizik 49).

Conclusion

The situation would only change with the democratization of Poland in 1989, marking the end of the youngest historical layer in Żuławy's life history. Both the institutional and community-based developments in this landscape that took place after 1989 saw greater attention to its heritage and a conscious effort to develop

a regional identity (Paprot-Wielopolska 313). As many of these processes continue until today and are thus more part of the present than the past of Żuławy, reflecting on them will be the explicit focus of the subsequent chapters in this report. The historical analysis of Żuławy contained in this chapter sheds light on the tumultuous, irregular, and often devastating process of the evolution and

development of this landscape even though it hardly exhausts the subjects. While I omitted certain themes out of necessity, I believe this chapter successfully highlights the profound and dynamic interactions of nature and culture that Żuławy is shaped by and the abundance of human and non-human actors who played a role in authoring this unique landscape.

Chapter 2. Water Infrastructure

Introduction

The landscape of Żuławy, as I intended to highlight in the previous chapter, has throughout the entirety of its history been defined by an evolving relationship between humans and nature. From the first settlements in the Neolithic Age to the established agricultural landscape of today, human activity in Żuławy is always determined by the interaction with nature; whether it is in the form of transformation of landscape, adaptation to its various challenges, or simply benefitting from its features, this interaction has always been an inextricable part of everyday life. However, out of all the natural forces and features that have played (and continue to play) a role in shaping this landscape, one stands out as clearly having the most prominent role – water. The proximity to water and the benefits offered by it such as amber deposits and fertile soils was what made this area attractive to settlers in the first place, but it also demanded certain adjustments in lifestyle – in other words, humans in Żuławy had to learn how to live with water from the very beginning. Water, or more precisely, water infrastructure and management and its connection to heritage in Żuławy will be my focus in this chapter.

The importance of water and the ability to deal with and prepare for the challenges associated with it only grew as Żuławy developed more and more. As I showed in the previous chapter, first infrastructural activities aimed at protection against floods were already undertaken during the period of Teutonic reign and the extent of these activities only intensified over the course of history. The human relationship with water in Żuławy rose to an entirely new level with the arrival of the Dutch settlers, who worked for centuries to transform the landscape into a burgeoning agricultural area and gave it the shape and structure that it has largely retained until today. This was possible through a combination of extensive knowledge on water management and painstaking efforts to construct an elaborate system of infrastructure that would maintain this landscape – areas of expertise that the Dutch were of course very familiar with. The legacy of water management that the Dutch settlers (and other authors of this landscape) left behind continues to be extremely relevant as water-related challenges seem to be more important than ever in a landscape as vulnerable as Żuławy. As I will show in this chapter, the modern iteration of the water infrastructure system the Dutch settlers first created is not only an important part of the cultural heritage of this region, but still forms the basis of the functioning of this landscape and secures the livelihoods of the people that inhabit it today.

Landscape as Infrastructural Space

In order to fully understand the extraordinarily important position of water infrastructure in Żuławy and its heritage, I must first reflect on the general connection between landscape and infrastructure. In addition to being spatial vessels for various narratives and cultures to develop, landscapes are first and foremost the “common medium for human inhabitation” (Carlson); any kind of organized human activity is, therefore, inherently tied to interacting with a particular landscape. These interactions, however, cannot simply take place on their own, but are rather sustained by elaborate systems of infrastructure developed to support them. Especially in our contemporary, industrialized world infrastructure facilitates every aspect of human life – from resource acquisition to production and transportation of goods, there are vast infrastructural systems that define our activity even if we are not constantly aware of them. Landscape, then, is not just a space where these systems exist, but is itself infrastructural – “as a network of infrastructural function and flow, landscape [...] becomes the operative platform of human existence” (Carlson). When it comes to the landscape of Żuławy, its infrastructural character is quite literally visible and cannot be overlooked (to see a landscape photograph which illustrates this, search online for photo’s of “Żuławy landscape”; without the system of water infrastructure and the associated practices, Żuławy would simply not exist as we know it. As this system is relatively unstable and vulnerable, it creates a unique environment in which infrastructure is always explicitly in sight instead of fading into the background, as can be the case in for example highly developed, post-industrial urban spaces.

The instability of the infrastructure of Żuławy can be understood as a combination of different, potentially dangerous factors: neglect, deterioration, lack of expertise or knowledge, insufficient investment as well as natural disasters all contribute to the vulnerability of this system in different ways (Fig. 11). The risks that these factors pose and the responses they necessitate vary greatly but are closely connected to the heritage of Żuławy – a theme that I will explore more in-depth in the following sections. One constant need that stems from all these factors, however, is that of maintenance, the perpetual process of keeping a system “in shape”. As “the infrastructural services which ensure the physical landscape matches our needs and desires” (Geffel), maintenance operations are a collection of practices indispensable to any infrastructure. The tools and techniques that are part of this collection, are often so

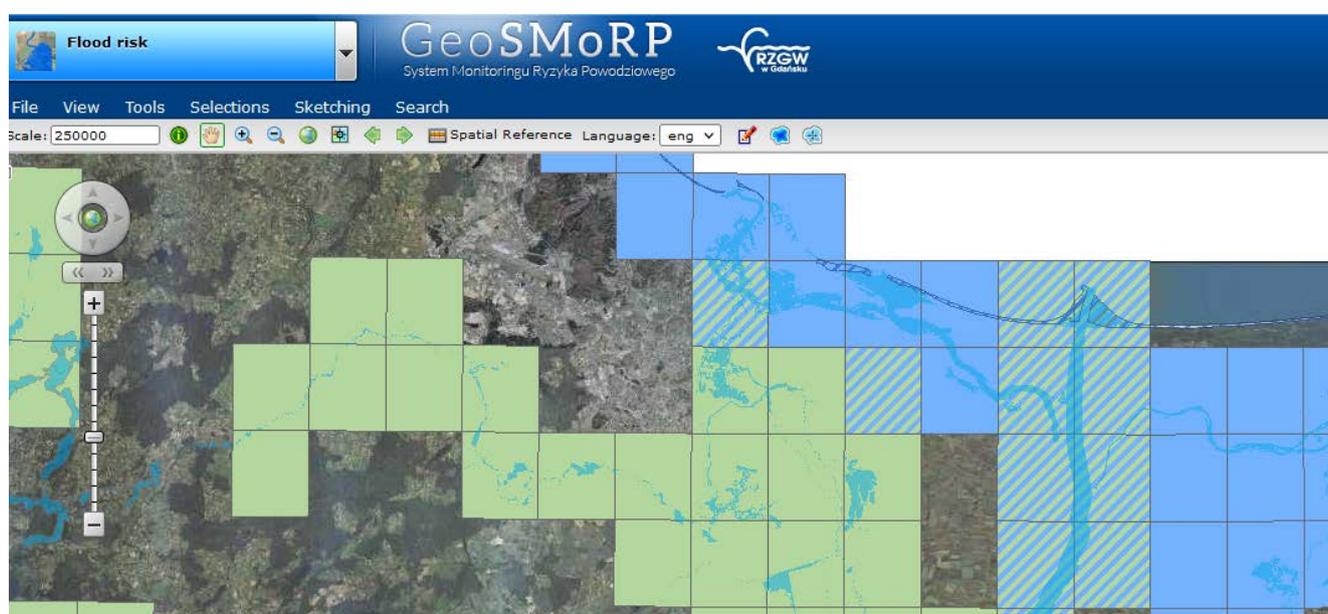


Figure 11 - Topographic map of the Vistula delta and surroundings with areas especially vulnerable to flooding marked in squares (GeoSMoRP)

familiar to us that they go largely unnoticed, working to create a status quo on which we rely (Geffel). That cannot be the case in Żuławy, however, as the failure to properly execute these operations can be absolutely devastating and cause the collapse of the entire functioning of the landscape, for example through flooding. Thus, maintenance operations in Żuławy, even those as simple as clearing unwanted flora from fields or keeping ditches and dikes clean become incredibly important to securing the livelihoods of the landscape's residents. That maintenance can be seen in some ways as the focal point of everyday life in Żuławy will become more apparent as I analyze two initiatives aimed at protecting and developing this landscape in the following sections of this chapter.

Institutional Initiatives in Żuławy – Program Żuławski 2030

Program Żuławski 2030 is an ongoing, long-term project, which focuses on improving systems of flood protection and prevention in Żuławy. The project is being led by the regional water authority in Gdansk, which falls under the national water management authority “Wody Polskie” and is a cooperation between various local and regional institutions. It is now by far the largest concerted institutional effort to address water challenges in the region and as a largely top-down initiative, it provides a unique opportunity to see how the region is viewed from an institutional perspective. The main goal of the

program is to improve the flood security of Żuławy by rebuilding and modernizing elements of water infrastructure and developing tools and mechanisms for flood detection and prevention; to see photographs of infrastructure that had been rebuilt during the 1st stage of the Program, go to the website of the regional water authority. As water infrastructure in Żuławy forms an important part of its heritage, analyzing this initiative provides key insight into the position of heritage in this landscape.

According to the program's assessment of its own goals and motivations, the actions undertaken as part of it are absolutely needed to stimulate balanced socio-economic development of the Żuławy region (“Program Żuławski” 6). This statement points to the dependence of the landscape on this infrastructure and its value for the region as the necessary condition of future development. Furthermore, the status of this system as part of Żuławy's material heritage and cultural landscape is recognized by the project as one of the main perceived values of the region in addition to its natural resources. (“Program Żuławski” 14). Protection and maintenance of heritage in the region forms an important additional element of the project, extending its scope beyond merely ensuring that Żuławy can properly function. While the institutional recognition of the heritage value of this system is important, it is not without its shortcomings and inconsistencies; throughout the document, there is at times a curious split between the functional and heritage values of the system despite the two being entangled. Separating the two is problematic and unnecessary as the main value of the system – securing the landscape and

enabling its functioning – remained the same from its conception until now. As many heritage elements of this system can still perform this primary role and thus contribute to solving the water challenges that Żuławy is facing (“Program Zulawski” 111-114), detaching it from a holistic view of the landscape and focusing on its largely symbolic value as heritage as such is artificial and can detract from its role in securing the landscape’s future. This tension showcases the importance of being aware of the internal logic of a document like this, as in this case it also transmits certain ideas about what heritage and its value is.

The document contains an extensive section analyzing the current state of the region (based on data from 2010), which points to what the institutional priorities are when it comes to the challenges and perspectives of Żuławy. An in-depth description of the water infrastructure system of Żuławy and a brief reflection on its historical development (“Program Zulawski” 66-68) reveal a great amount of appreciation for this technologically sophisticated ensemble but also a reductive view of the region’s history, which is presented as largely teleological and smooth. The document describes the dire state of the system, with more than 30% of its elements requiring immediate action (“Program Zulawski” 94) and stresses the importance of future investment and maintenance as well as the need for much better coordination between relevant initiatives on multiple levels (local, regional, subregional). The narrative of a harmonious cultural landscape in which

nature and human successfully coexist is present in the document as well despite the program effectively being a continuation of the problematic and tense relation between the two. This is most visible in the sections which describe the ecological value of the region such as its high biodiversity potential and large number of protected nature areas (“Program Zulawski” 95-98”) (Fig.12) and point to the potential negative environmental impact of the program. The conflict between infrastructure and nature remains a constant theme throughout the document, creating a parallel with the historical development of Żuławy’s cultural landscape. Finally, the overview of historical floods contained in the document underlines that dealing with this type of disaster has been a constant element of everyday life in this landscape and is thus an important part of its heritage.

The relationship between heritage and contemporary water infrastructure in Żuławy is made most visible in the document’s SWOT analysis and the description of its perceived effects (“Program Zulawski” 95-98, 111-114); based on the two sections, it becomes clear that the two aspects of the system overlap to a great degree both in terms of what they are threatened by and what they can provide for the region. The biggest risk to the heritage elements and the system as a whole remains the deterioration of infrastructure due to neglect and lack of investment (“Program Zulawski” 95-98), which leads to an increased risk of flood and, in turn, more damage to



Figure 12 - The Lake Druzno nature reserve is one of the many protected natural areas in Żuławy and is a very important bird nesting site (Arkadiusz Markiewicz, Wikimedia Commons)

the system and the landscape (For a photograph of a damaged dike on the river Kamionka, see page 74 of “Program Zulawski 2030). The water system, then, needs to protect itself in order to avoid creating a vicious cycle in which the cultural landscape of Żuławy and the quality of life of its residents continues to deteriorate, while the need for investment grows endlessly. Additionally, larger processes such as climate change and potential further peripheralization of the region also threaten its heritage as the requirements for its protection and maintenance will only increase and can only be sustained if the region can develop. If the water system is instead well-maintained, its heritage elements will not only be protected and in a better state, but also contribute to restoring the vitality of the region both by partially functioning in the infrastructure system itself and by providing an additional avenue for socioeconomic development in the form of tourism and regional identity-building (“Program Zulawski” 113). Another way in which heritage can help is the possible revitalization of historical rural planning, which is much better suited to the specifics of Żuławy and could be a solution to the effectively non-existent current system of spatial planning and arbitrary developments that contributed to the deterioration of landscape in the past few decades. It is important to remember, however, that the utmost priority of the program is the security of Żuławy and its residents and that may require changes to the landscape that interfere with its heritage and historical structure; the program proposes, for example, the intentional flooding of certain polders that have limited economic value in order to decrease the flood risk for the rest of the region (“Program Zulawski” 103-104). The possibility of invasive (at least from a heritage perspective) changes to the landscape shows the need to consider in greater detail the technical adaptability and resilience of this heritage – can adaptations be made in a way that maintains or even strengthens the historical features of the landscape or would that put too much strain on an already precarious system?

Water Management in Social Initiatives in Żuławy

Another aspect of water-related heritage in Żuławy that attracts attention is the variety of water management practices that have emerged in connection to the landscape and the infrastructure system that shaped it. Historically, these were mostly community-based maintenance practices and democratic structures of local governance aimed at keeping the entire region safe by routinely repairing and rebuilding various elements of

water infrastructure. These social practices are interesting not only because they could be considered forms of intangible cultural heritage, but because they can potentially help solve some of the challenges that Żuławy is facing. As one of the main social weaknesses of the region identified in the Program Zulawski 2030 is the lack of community interest and engagement in flood protection (95), reintroducing some of these practices and social structures (in a modernized way) may very well be a remedy to this issue. One locally oriented initiative named “Związki walowe wracaja” (Dike associations return) intended to do exactly that by promoting “social flood protection” and reintroducing the concept of dike associations. The initiative started in 2013 as a collaboration between local municipalities, heritage organizations, and the Zulawska LGD (Lokalna Grupa Działania – “Local Action Group”) with the explicit goal of educating people on social forms of flood protection.

As dike associations were historically meant to be democratic, community-based structures that were tasked with dividing responsibility for maintenance of infrastructure among residents, they were chosen for the project as a great way to continue a cultural practice while adapting it to contemporary changes in social life and technological progress in the water infrastructure system of Żuławy (“Poradnik” 5). The project consisted of a series of conferences, workshops, and publications, which resulted in the creation of a comprehensive guide to social flood protection. The guide contains a wealth of practical information concerning what to do and who to contact before, during, and after a flood occurs as well as knowledge on what flood means in contemporary Żuławy – in terms of the dangers that it represents to the region, the technological systems that are in place to protect against it, and ecological forms of protection. Furthermore, it also contains a community-created guideline on what effective social flood protection should look like – this includes further education, creating family plans for flood emergencies, greater integration of people in the communities at risk, more efficient cooperation with existing crisis management structures, and the establishment of local councils that would actively continue the tradition of dike associations (“Poradnik” 47-53). Finally, the project ensured the possibility of further knowledge transfer by awarding workshop participants the status of “dike watchmen” and obliging them to host at least one workshop or training session in their local community (“Poradnik” 5).

This initiative is incredibly important to consider in the context of Żuławy’s heritage as it presents one possibility of what its future may be. It refers directly to a heritage practice that was once indispensable to the landscape and adapts it to the needs of contemporary

Żuławy while largely continuing its original character. By working within the framework of participation and community engagement, the project could effectively stay attentive to Żuławy's residents' current needs and desires and lay foundations for a "new old" form of building community relations. This project also works as a form of heritage education, transferring knowledge on cultural practices as well as on the water system itself – the guide includes a lexicon section that explains the purpose of various elements of water infrastructure and showcases some of the ones that are historically significant ("Poradnik" 73-80). This project, then, encourages people to connect with their local heritage in a practical way and build social bonds in relation to it, but importantly does so in the context of everyday life in Żuławy rather than heritage for heritage's sake. While I have not been able to find out to what the long-term effects of this project are, it is safe to say that deeply social initiatives like this can be complimentary to something like the Program Żuławski 2030. They can provide the much-needed bottom-up engagement local communities with the needs and challenges of the region and possibly work together with the more top-down, institutional initiatives towards a sustainable future of Żuławy and its heritage.

Conclusion

The status of water-related cultural heritage in Żuławy is not easy to determine as it is inextricably tied to contemporary water management practices; however, from my analysis of the two vastly different initiatives which took or are taking place in the region it seems that heritage can possibly play a role in creating a sustainable future for the landscape. Although heritage occupies very different positions in the two projects, it appears in both cases that it can to some extent contribute to revitalizing the region and aid in solving its needs and challenges. Several heritage elements of the water infrastructure system can still perform their original function and contribute to providing water security for the region; others can function as tourist attractions and thus participate in the economic growth of Żuławy, even if tourism is not sustainable as the sole driver of development. Additionally, the threats to the heritage in Żuławy are largely the same as the threats to the whole landscape, which means that region-wide initiatives are likely to benefit heritage even if it is not their main purpose. Finally, heritage practices can contribute to building community ties, protecting against floods, and involving the community in the maintenance of this landscape, making it a legitimate tool for building a sustainable future. As a result, there may be a modern revival of an amphibious culture – the core of which is "a series of adaptations to a wetland landscape" (van Dam 78) – comparable perhaps to the one that existed in the Netherlands historically. To sustain such development, however, more initiatives and investments of both kinds will be necessary – just as every dike, ditch, and canal requires constant maintenance to function properly so does the whole landscape of Żuławy.

Introduction

Similar to water and water management, I have highlighted that agriculture is a defining theme in the history of Żuławy and so its connection to this landscape simply cannot be understated. Agriculture already played quite an important role in the region in the medieval times and the desire to develop it further was what largely enabled the migrations of Oleder settlers, which in turn initiated the deep structural transformation of this landscape. Ever since the beginning of that transformation and in spite of the turbulent nature of Żuławy's history, agriculture had only become more and more of an inseparable element of its cultural landscape as centuries passed. The result of these developments is that the landscape of Żuławy is pretty much unimaginable without its agricultural character today and that agriculture forms an important element of the region's heritage. Thus, agriculture is not only important to the continuity of this landscape and the maintenance of its heritage, but also forms a significant element of the regional economy and is still part of many people's everyday lives; it is, then, even more important to consider the future of this sector in Żuławy and the position that heritage can potentially have in shaping this future in the context of the challenges that the region is currently facing.

My approach to this chapter will differ from the previous chapter on water management in that I will focus on a few, more general themes rather than very specific cases. This is due to the aggregate character of agriculture as an industry – whereas in the case of water management the challenges Żuławy faces can be seen as very highly localized and stemming almost exclusively from the specifics of the landscape, agriculture-related challenges often extend to the national or even global scale. Challenges such as climate change, air and water pollution, depopulation of rural areas, low incomes amongst farmers, or the ageing of societies are more than likely to be relevant in many (if not most) agricultural landscapes in Poland and beyond. This is not to say that how these challenges play out in Żuławy is the same as in any other rural landscape – on the contrary, the particularities of the region still determine which challenges are the most pressing and how they can and should be approached. For my analysis to remain sharp, I will attempt to consider the agricultural industry and its relation in heritage in Żuławy in a more holistic way while remaining aware of the details of the landscape.

Knowledge and Innovation

One of the major themes which are relevant for thinking about the future of agriculture in Żuławy (and Poland in general) is knowledge and innovation; these topics appear consistently in major agricultural policy documents such as the EU's Common Agricultural Policy or the national program for the development of rural areas (PROW) and are commonly identified as key to making the industry more sustainable and future-proof. The frequency at which this theme appears in the aforementioned documents and the emphasis that is put on it by various institutions concerned with agriculture (e.g. the Polish Ministry of Agriculture and Rural Development or the National Network of Rural Areas) grant it an almost paradigmatic status – it seems as if every thread can be eventually traced back to knowledge and/or innovation. The privileged position of this theme is quite understandable when we consider the often-negative perception of agriculture as an outdated and stagnant sector – despite the consistently crucial role of the sector in creating secure food supply chains, the continuous process of urbanization and depopulation of rural areas means that fewer and fewer people come into direct contact with agricultural landscapes and the changes that take place in them. A focus on innovation and knowledge can help initiate a sort of “rebranding” of agriculture and address the issue of negative perception of rural areas and help bridge the urban-rural division, challenges both identified as key in the *Długofalowa Wizja Rozwoju Obszarów Wiejskich* (Long-term Vision for Rural Areas) (44).

One of the greatest challenges that agricultural landscapes like Żuławy are currently facing is the ageing of populations – the share of people over 65 years in rural populations in Poland has increased by 13% in the years 2015-2020 (Commission 19). Although the situation in Żuławy was not as drastic in comparison, the ageing trend remains present and likely to continue (*Strategia Rozwoju Lokalnego* 11). This trend is the outcome of not only the general rise in life expectancy, but also of the difficult position of young people in Żuławy and other agricultural landscapes; many move to cities because they feel that living in the countryside does not offer great perspectives (*Długofalowa* 44) and those who stay (or immigrate) and decide to engage in agriculture face challenges due to “constraints on farm succession and access to land” (Commission 73). As a result, there is a continuously growing generational gap between farmers, which in turn leads to the disruption of knowledge transfer. This is especially dangerous in Żuławy, whose

unique features require extra knowledge (for example in terms of maintenance operations) to be utilized properly; as I have highlighted previously, insufficient knowledge about this landscape can lead to its deterioration and threaten its structural continuity. While Poland has a relatively well-developed AKIS (Agricultural Knowledge and Innovation Systems) structure with a wide selection of training programs and advisory services available to farmers, it is not sufficiently utilized as services are poorly integrated and largely decentralized (Commission 21). Similarly, while there is a large body of educational and research institutions concerned with agriculture, their efforts are often uncoordinated and fragmented making knowledge inaccessible (Długofalowa 14-15). A potential solution to this in Żuławy could be the creation of more community-based knowledge/innovation-related initiatives such as workshops, training programs, or direct advisory services. The “Social Flood Protection” initiative, which I looked at in the previous chapter could serve as an inspiration for such projects as it successfully utilizes one of the greatest strengths of rural areas – large amounts of social capital and a great willingness among people to engage with the community (Program Rozwoju 44). Furthermore, such initiatives can hopefully bypass some of the institutional hurdles mentioned before and lead to a greater integration of local farmers, granting them a stronger position on the market and continuing the democratic heritage of Żuławy.

The last aspect of this theme is more technical – namely the call to adopt new farming techniques, utilize new technologies, and digitize agriculture. Technological innovation can lead to the increase in productivity and efficiency of farming and reduce its environmental impact, which is one of the sector’s biggest challenges (Commission 3). Among the frequently indicated possibilities for innovation are: simple operations like replacing outdated farming equipment (Program Rozwoju 46); the promotion of more sustainable methods such as regenerative farming, precision farming, and gene editing of crops (Długofalowa 20-24); the adoption of more general tech concepts such as smart villages, circular economy, and innovation incubators (Długofalowa 24). Although heritage can first appear contradictory to this highly technocratic paradigm, there may be a role for it in the future of agriculture as one of the main goals of the policies analyzed here is promoting organic farming, the popularity of which is declining in Poland at the moment (Commission 3). The push to promote ecology in agriculture points to the need to integrate “traditional” knowledge and methods such as composting, the usage of biochemicals and natural fertilizers, waste reuse, or rational crop choice (Długofalowa 58-59). In the case of Żuławy, looking back at the agricultural legacy of the

Mennonites and other Oleder settlers can shed light on which crops are most suitable for this landscape, what trees and plants should be planted on fields and dikes, and how rainfall and farm animals can be utilized to fertilize the soil. However, it is important to remember that some of this knowledge may not be useful at all; for example, while many of the initial Mennonite settlers in Żuławy started orchards, this direction is probably not viable given that Poland struggles with the structural overproduction of apples (Commission 11). In the end, it may be possible to strike a balance between technological innovation and past knowledge, leading to a more sustainable and resilient future of agriculture in Żuławy.

Place Authenticity

The next theme which I find relevant to investigate is the process of authentication and how it is (or can be) utilized in Żuławy as well as rural landscapes in general. Considering this topic here is important for two distinct reasons: tourism is often highlighted in agricultural policy documents as one of the main avenues for the development of rural areas; promotion through authenticity is frequently cited as a key strategy for popularizing agriculture-related products on the market. In his text on experiential cultural tourism, Richard Prentice investigates various strategies that are used to offer authenticity to tourists (15). Although the text focuses on the changing position of museums in an increasingly experiential tourist industry (Prentice 6-7), the strategies outlined in it are relevant far beyond this scope and used in multiple contexts. Several of these tactics are already being utilized to promote the authenticity of Żuławy, most notably what Prentice describes as “place branding” and “naturalness”.

The first seeks to “provide a clear and distinct image by which to differentiate a destination from others” and “offer overall something greater than a simple set of physical attributes” (Prentice 18) and is commonly realized in Żuławy by stressing the historical association with Mennonite settlers. The epitome of this strategy is “the Mennonite Trail” project, a touristic cycling trail (Fig.13), which traces the material cultural heritage (villages, infrastructure elements, architecture, cemeteries etc.) of the Mennonites in Żuławy and successfully build ups the authenticity of the region in a few ways (To see an arcade house, an iconic element of this aspect of Żuławy's heritage, search for pictures of Żuławy Wislane » Dom Podcieniowy. First, by focusing exclusively on Mennonite heritage, it cements the distinctiveness of the region as a “Dutch” landscape in



Figure 13 - Map of the Mennonite Trail (OpenStreetMap)

Poland, one whose atmosphere and heritage are so unique that they cannot be experienced elsewhere in the country. It also elevates the meaning of the landscape by assigning its unique structure distinct cultural value, which is done by referring to the idea of “land stolen from the sea”, a description often applied to the water management tradition of the Dutch. This way, even those who are not particularly interested in the infrastructural aspects of this landscape are invited to appreciate it as an achievement of human ingenuity akin to the Netherlands. Finally, as the trail is a literal and very personalized journey through Żuławki, the heritage elements become elements of a living and evolving cultural landscape rather than separate destinations, which works to “evoke associations of quality and relationships with tourists” (Prentice 18).

The second strategy, authentication through proximity to nature, is frequently used to promote rural and agricultural museums and landscapes (Prentice 17), Żuławki included. The possibility of a more immediate connection to nature can be especially appealing to

visitors and potential immigrants whose everyday life is spent in urban environments, offering the chance to “get away” from the city and interact with nature in a much different way; this is very relevant for Żuławki, which is within striking distance of major urban areas of Gdańsk, Elbląg, and Malbork. Interestingly, as Żuławki has rather little “wild” nature to offer beyond the Vistula Spit, agricultural features are also presented as natural, steering away from the perception of agriculture as deeply anthropocentric. Importantly, naturalness is recognized as one of the biggest strengths of Żuławki by its residents due to its capacity for promoting tourism (Strategia Rozwoju Lokalnego 22) and in the “Długofalowa” as an important boon of living in rural areas in general (10), which indicates that this form of authentication is very successful. Although naturalness can certainly help promote Żuławki, it is crucial to not let it divert attention away from the environmental challenges, which the region is facing. Water pollution, rising emissions, the deterioration of soil, and dropping levels of biodiversity are all issues, which agriculture directly fuels (Commission 3-15) and excessive emphasis



Figure 14 - Locally-produced cheese sold at the Maly Holender (Little Dutchman) inn in Żuławy (@MalyHolender, Facebook.com)

on naturalness runs the risk of “greenwashing” the sector and hampering the creation of a sustainable future.

The usefulness of these two strategies to imagining the future of Żuławy extends beyond only tourism-focused development, which is not desirable due to the potential overexploitation of the landscape and neglect of local needs. As the rising demand for agricultural products and the continuously increasing consumer purchasing power in Poland offer a major opportunity for the agricultural sector (Program Rozwoju 49), both place branding and naturalness (and heritage, by extension) can contribute to developing appropriate products. An example of this is the local production of cheeses and hams in Żuławy, a tradition started by the Mennonites; the popularity of these products can benefit greatly from successful place branding of the region and can appeal to consumers interested in the heritage of the area as well as those wanting to support local farmers and food producers (Fig. 14). Naturalness, on the other hand, can contribute to the promotion of organic products, which is supported by all the major policy documents mentioned in this chapter. As more consumers want to buy organic products (partially) thanks to the perception of the landscape as authentically natural, the share of organic farms and food producers will increase, potentially making the industry more sustainable.

Optimizing Agriculture in Żuławy

In this final section of the chapter the focus is on two important strategies that may contribute to more efficient and sustainable future for the agricultural industry in Żuławy: the enlargement of plots and the shortening of food supply chains. While both aspects are relevant for the future of agriculture in Poland in general, they are especially important here due to the characteristics of the landscape. The vast majority of agricultural estates in Żuławy is very small (Fig. 15), with only 30% of them in 2014 having an area of over 15ha (Strategia Rozwoju Lokalnego 14), which makes the sector extremely fragmented and leads to a host of issues. Very small farms are generally less productive, which can slow down the economic development of the region and weaken their position on a market increasingly dominated by large agricultural corporations (Długofalowa 97). Small farms in Poland generate less income, are more dependent on financial aid and more vulnerable to income fluctuations than larger estates (Commission 8-9), which worsens the issue of income inequality amongst farmers. Additionally, since Żuławy is a demanding landscape, differences in knowledge and approach between



Figure 15 - A map of the administrative divisions of land plots illustrates the fragmentation of the landscape (GeoSMoRP)

individual farmers may play a larger role and hamper the effective utilization of its features.

While the enlargement of land plots can certainly help alleviate some of the issues mentioned above, there are a few significant barriers to its implementation in practice. First, there is the problem of choosing which landowners should give up their land and then having to convince them to do it – officials may be unwilling to put forward such a proposal because of the possible social unrest and legal procedures. There are also major issues concerning compensation – how do you make sure that the affected people are fairly compensated for their lost land and guaranteed a safe and viable employment and living situation? The process of relocating and compensating people would require large financial resources that local municipalities most likely do not have access to, meaning financial support from the regional or even national authorities could be necessary. The traumatic legacy of PGRs (large state-owned farms in communist Poland), which brought poverty and hunger to Żuławy and whose devastating effects are still visible today in the form of social exclusion in post-PGR areas (Strategia Rozwoju Lokalnego 14) makes this proposal politically problematic. Finally, concrete steps would need to be taken by the authorities to ensure that the newly created estates are diversified, and preferably medium-sized as very big, specialized farms threaten landscape and biodiversity (Commission 16) and may lead to the monopolization of the market.

The shortening of food supply chains may prove to be a more viable strategy as the large number of small-scale estates provides a good basis for the development of this process (Długofalowa 29) and there are not many glaring obstacles. As global food supply chains favor industrialized agriculture and large food corporations due to the need for constant supply of standardized products (Długofalowa 97), short and local food supply chains offer an alternative that can support the growth of organic and localized agriculture. While short supply chains are not very developed in Poland at the moment, another reason to pursue this strategy is that it can improve the position of farmers on the market and provide additional opportunities for small farms (Commission 10). Short supply chains rely on building a direct connection between food producers and consumers and can thus contribute to the protection of natural resources, animal welfare, and strengthening local community ties (Długofalowa 98). These connections can be fostered through digital solutions like online bazaars, the authentication strategies I described in the previous section, and through more community-based structures such as food co-ops. Crucial to developing short supply chains will be the integration of farmers and food producers and participation in bottom-up initiatives - both of which are currently on one of the lowest levels in the EU (Program Rozwoju 47, Commission 11). As this issue is caused partially by the traumatic heritage of PGRs and the resulting distrust towards any cooperative initiatives (Commission 11),

a solution for Żuławy may be referring to the mercantile tradition of Oleder settlers, who often sold their wares directly to nearby city-dwellers. Popularizing and promoting this image can be a way to use the heritage as a tool to build a sustainable future for the agriculture of Żuławy.

Conclusion

The rich history and heritage of Żuławy means that a future without agriculture is neither possible nor desirable for this landscape. Nevertheless, the sector is facing increasing pressure to adapt and reinvent itself in a more future-proof way. Climate change, environmental degradation, demographic shifts and economic inequalities all make urgent the need to imagine and

realize a sustainable continuation of the agricultural tradition of this region. My survey of various agriculture-related themes shows that this task is extremely difficult and complex, but not carrying it out will be most likely disastrous for this already vulnerable landscape – both its people and its culture. Fortunately, just as in the case of water management, heritage does not seem to stand in the way of creating a resilient future for agriculture in this landscape and can even be mobilized to help build that future. However, this potentially productive role of heritage cannot be taken for granted - its potential needs to be actively recognized and used by both residents and the relevant authorities; this will ultimately require significant investment into social and cultural initiatives in Żuławy and a great willingness to work towards a more resilient future on the side of local and regional stakeholders.

Introduction

This chapter functions as a short reflection on the data and findings I collected during a field research excursion to Żuławy carried out shortly after the official end of my internship at the Cultural Heritage Agency of the Netherlands (RCE). The excursion, which was financed by the RCE and took place in August of 2021 over the period of 5 days, was meant to supplement the main portion of this report. Its main goals were: collection of data I was not able to obtain remotely; direct and personal observation of the landscape; field assessment and analyses of (potential) heritage sites and various points of interests. The base of operations for the excursion was the city of Gdańsk and the main form of transportation used was a car. The findings presented in this chapter are by no means complete and point to the need for further field research in the region, including anthropological and ethnographic research.

Site Abundance

The bulk of the activities I undertook during these few days consisted of visits to numerous places of interest – mainly heritage sites, cultural institutions, the urban centres in the region, and hydrotechnical objects. The density and abundance of these sites were astonishing despite all the knowledge of the region I had obtained during the writing of the main part of this report. Virtually every village and municipality has something to offer – from a former Protestant church or Mennonite cemetery to a sluice or pump station – which made it impossible to visit all the sites in only a few days. To illustrate the sheer amount and diversity of interesting places that can be seen in Żuławy even on a short trip like this excursion, I included a map of the sites I planned or managed to visit (Fig. 16).

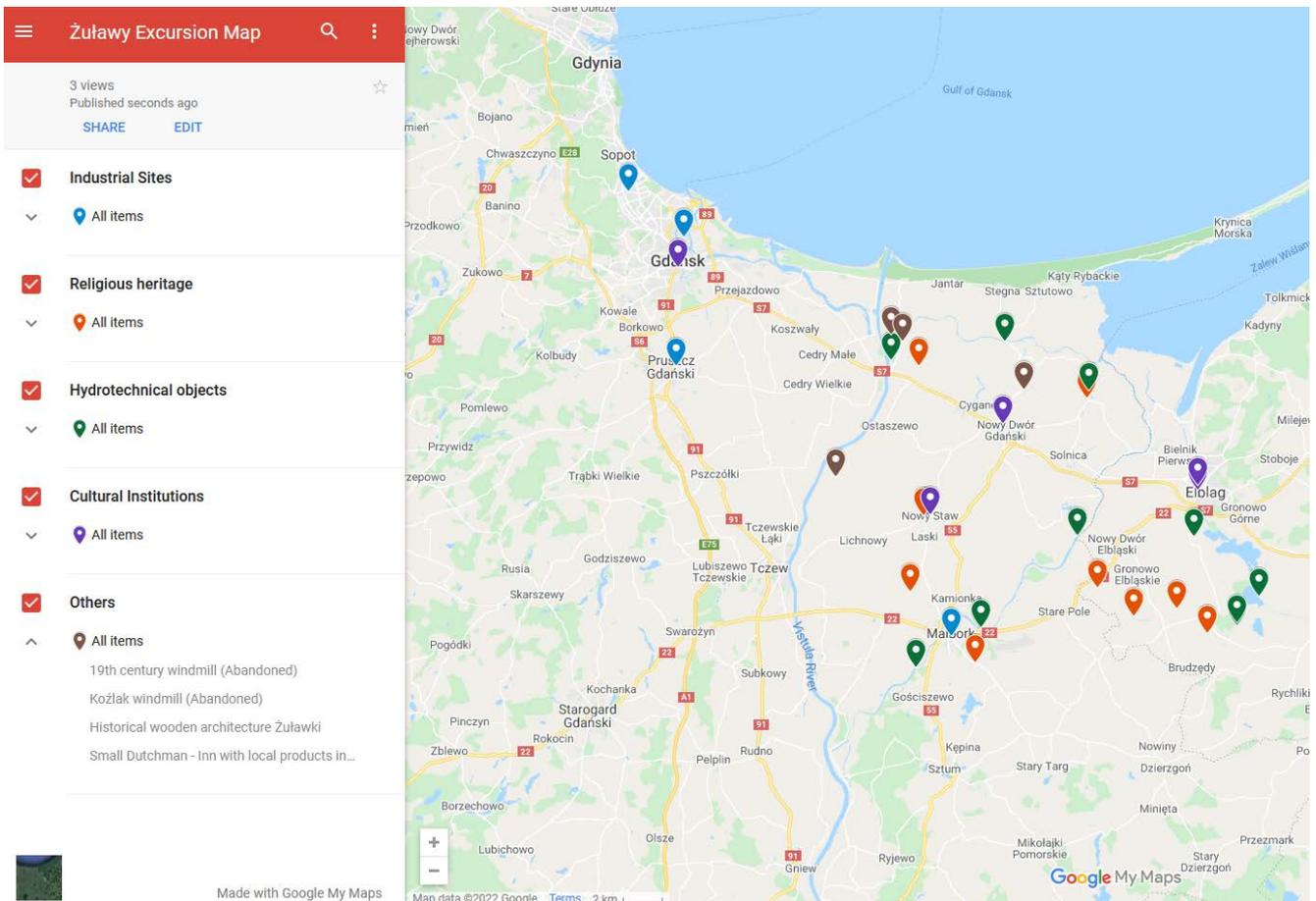


Figure 16 - Map of sites, which I either visited or planned to visit during the excursion (Map Data: Google)



Figure 17– Mennonite cemetery in Stogi (Author's collection)



Figure 18 - Pump Station Chłodniewo (Author's collection)

The plethora of sites can be understood as both an asset and a source of additional challenges for the region, especially when it comes to the development of tourism. Żuławy can thus be readily promoted to potential visitors as a repeat destination, where something new can be discovered every time. It also allows visitors to chart their own paths through the region based on their needs and desires – for example those interested in Mennonite heritage can embark on a tour of Mennonite cemeteries

(Fig.17), while those interested more in the hydrotechnical aspects of the landscape can focus on pump stations, sluices, and bridges (Fig.18). Importantly, these categories are by no means exclusive and can be combined to create a more holistic experience of Żuławy; to effectively utilize that on a regional level, however, an overarching narrative that is coherent and multifaceted would need to be created. This would require close cooperation between institutions and local communities,



Figure 19 - Information on architectural styles in Żuławy in the Żuławy Historic Park (Author's collection)



Figure 20 - Most of the exhibition text in the Żuławy Historic Park is also translated to Dutch (Author's collection)



Figure 21 - Żuławy Historic Park points to international cooperation and revived interest in Mennonite heritage (Author's collection)

for which support on the national or even international level (for example from the RCE) could be crucial. The same conclusion can be drawn for the building of a regional identity, which is something that I have already pointed to in the main chapters; while a shared heritage narrative can very well serve as a basis for this process, much more needs to be done. The only attempt to provide such a narrative I encountered during the excursion was in the Żuławy Historic Park in Nowy Dwór Gdański (Fig.19,20,21) – while valuable, the efforts of one cultural institution are simply not enough.

Fragmentation

The other major finding that I wish to stress here is how fragmented the region is in practically every observable aspect. The myriad of sites that are important to Żuławy and its functioning naturally multiplies the need for investment, rendering disparities in access to resources even more discernible. This was most readily and literally visible in differences in quality and state of basic infrastructure (roads, sidewalks, signs, etc.) between different villages and municipalities – some sites were easily reachable and properly marked (Fig. 22), while others were barely accessible at all even with a car (Fig.23). This also raises questions about accessibility in

the region both for residents and visitors as it seems that having a car is a necessity; public transport is very underdeveloped outside of urban centres and the Gdańsk – Elbląg railway line, while cycling infrastructure is practically nonexistent in the rural areas, making it only viable as a form of leisure rather than a legitimate transport mode. These observations are concerning and they support what I have argued in the main chapters – sustainable and equal development in the region needs to be a key priority. I observed similar disparities when it comes to the state of the heritage sites themselves; some were very well maintained and contained information boards or plaques (Fig. 24) while many other were abandoned or at various stages of decay (Fig. 25). While the curated process of ruination or decay can often be a legitimate strategy for the heritagization process, it did not appear intentional here nor is it particularly appropriate for the types of heritage sites most commonly found in Żuławy (hydraulic and religious). While sites more suitable for this approach are available in the landscape - like the abandoned brewery in Nowy Staw (Fig. 26) or sugar factory in Pruszcz Gdański – there are no ongoing efforts to capitalize on that based on what I gathered from informal conversations with residents. Efforts to capitalize on cultural heritage sites (mainly the types noted above) were present, but seemed largely uncoordinated with the exception of a few more prominent sites.



Figure 22 - The Mennonite cemetery in Stogi was the best maintained and most accessible heritage site (Author's collection)



Figure 23 - The Mennonite cemetery in Niedźwiedźówka was barely noticeable and very hard to access (Author's collection)





Figure 25 - Deteriorating windmill in Drewnica (Author's collection)

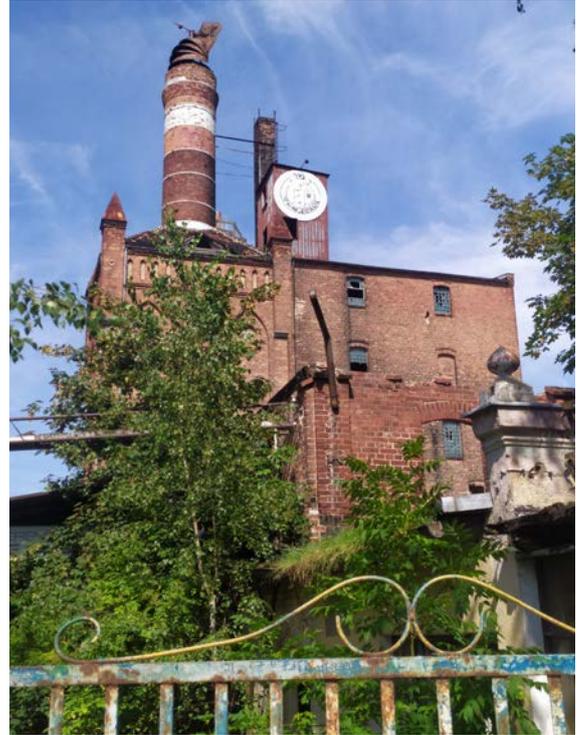


Figure 26 - Abandoned brewery in Nowy Staw (Author's collection)



Figure 27 - The landscape near Chłodniewo (Author's collection)



Figure 28 - The landscape near Niedzwiedziówka (Author's collection)

The final and crucial conclusion I gathered during the excursion is that as an observer, it is very difficult to perceive the landscape as coherent, systemic, and networked. Even with the knowledge of the features that make the landscape unique, it was generally difficult to notice them in the field (Fig. 27,28), with only a couple exceptions. This is problematic, especially in comparison to similar landscapes in the Netherlands, which stand out aesthetically even without in-depth knowledge or awareness of their structure. The difficulty to visually register the structural qualities of Żuławy can significantly undercut its development process in multiple aspects. For the purposes of tourism and heritagization, aesthetic perception is of course extremely important so this can hamper the promotion of the region as unique and a “Dutch” landscape in Poland. More generally, businesses and institutions might be discouraged from investing if

they do not immediately see what makes Żuławy different from other landscapes, which can in turn perpetuate the cycle of deterioration and decay of the region's features. Additionally, the constantly evolving relationship with water, which defines this landscape runs the risk of being drowned out if more decisive action is not undertaken. This finding supports what I have argued in the main chapters - the critical importance of maintenance operations and investments in the region - and shows the limitations of remote research. Despite these worrying observations about the general state of the landscape, its agricultural character was still convincingly prominent and impressive, which further stresses the importance of working towards a more resilient future for this industry in Żuławy.

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Żuławy Wislane in the delta of Vistula in northern Poland is a region unlike any other in the country; this unique landscape, with its extensive network of canals, dikes and other elements of water infrastructure, has been heavily influenced by the Dutch. This report presents the results of a study of the historical connection between the Vistula Delta landscape and the Netherlands, as well as the unique hydrotechnical heritage that exists there today which is to a great extent a result of this connection. What is the current state of this landscape and what is its potential for the future?

The Cultural Heritage Agency provides knowledge and advice to give the future a past