Navigating Greenland's Land Administration

Borrowing Lessons from Land Administration Practices in Europe

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Resumé

Grønland har en kollektiv ejendomsret til jorden, som er interessant at udforske, herunder hvordan landets arealadministration påvirker den fysiske planlægning.

Gennem empiriindsamling fra praksis omkring leje af jord i Norge og Holland samt erfaringer fra tidligere projekt om bygninger på fremmed grund i Danmark, søges det besvaret, hvordan mere etablerede lande juridisk og praktisk håndterer leje af grunde. Derudover trækkes der på erfaringer fra ansættelsen i Afdelingen for Landsplanlægning i Grønland Selvstyre. Der anvendes dokumentanalyse af relevant litteratur og love om de respektive lande og en komparativ analyse om lighederne og forskellene ved landenes tilgange til fysisk planlægning, miljøbeskyttelse og administration af leje af grunde.

Projektet går ud på at undersøge, hvordan arealadministration i Grønland påvirker arealanvendelsen og den fysiske planlægning. Oprindelsen af arealadministrationen i Grønland søges i den forbindelse at blive afdækket, og om Grønland kan tage ved lære af praksis fra Danmark, Norge og Holland, når det kommer til at afveje den private ejendomsret til bygninger på lejet grund med samfundsinteresser i planlægningen. Derudover søges det udforsket, hvordan arealadministrationen i Grønland kan opnå mere balance mellem økonomisk udvikling, bevarelse af den traditionelle kollektive ejendomsret og naturlige ressourcer.

Grønland har været igennem en modernisering og er blevet et moderne samfund, men nuværende tilgang til arealadministration, fysisk planlægning samt miljøbeskyttelse mangler en holistisk tilgang, der fremmer en anerkendelse af, at samfundet er afhængige af de naturgivne ressourcer, og at der skal ændres i måden, man går til de naturlige ressourcer. Gennem empiriindsamling og analysen belyses konkrete udfordringer, som Grønland døjer med, såsom manglende sammenspil mellem miljøbeskyttelsesloven og planloven til at værne om sundhedshensyn for befolkningen og sikkerheden inde i de beboede steder.

Projektet belyser, at arealadministration ikke på nuværende tidspunkt er anvendt optimalt, da der er ikke dialog mellem kommuner og brugsrettighedsindehavere, når det kommer til brugen af jorden i Grønland. Vilkårene for arealtildelinger mangler mere præcise formuleringer om, hvad der er tilladt, og hvornår noget ikke længere lever op til vilkårene for udstedelsen af tilladelsen. Derudover mangler der aktiv

tilbagetagelse af arealer, som ikke længere er under anvendelse. Projektet belyser samtidig, at leje af jord har potentiale til at gøre en større effekt på udviklingen i Grønland på en positiv måde. Ved en aktiv tolkning af planlovens bestemmelser er det muligt for kommunerne at tilbagetage arealer, som kan vurderes til ikke at være under anvendelse. Norge og Holland har begge en lov om leje af grunde, som giver klarhed og gennemsigtighed omkring leje af jord-tilgangen, og som beskytter rettighederne for både udlejer og lejer af grundene. Kommunerne i begge lande agerer som udlejere af grunde til beboelse. Derudover viser projektet, at der gennem indførelse af ejendomsbeskatning og arealleje kan skabes en indtægtskilde for kommunerne, der kan bruges til at lave infrastrukturforbedringer og byggemodning, og at arealleje kan sikre, at der er færre bygninger, der ikke er i brug i Grønland.

Abstract

The impact of leasehold management on land use and physical planning in different geographical, cultural, and environmental contexts needs to be better understood. Furthermore, the collective ownership of land in Greenland is not widely recognised as not encompassing private property rights, and this project explores whether the private property rights to buildings on leased land can be compared to buildings on leased land in Europe.

The project aims to explore the development of leasehold management in Greenland. It also explores how Greenland can learn from other European countries regarding leasehold management practices. Lastly, the project will focus on how the land in Greenland can be efficiently utilised and how to enable the reclamation or sale of buildings that are no longer in use.

This project aims to gather empirical data on ground lease practices in Norway and the Netherlands, as well as insights from a previous project in Denmark and experiences from the Department of National Planning in the Government of Greenland. The data will be used to compare and analyse the countries' approaches to physical planning, environmental protection, and ground lease administration.

Municipalities can introduce land lease fees to generate revenue for funding public services and infrastructure projects. These fees can be implemented without negatively impacting citizens' economic behaviour. The government and municipalities can also influence land use by setting appropriate land lease fees.

Greenland's leasehold system follows traditional hunter principles of property rights. The Danish state adopted these principles to acquire land and build settlements, believing it aligned with ancient Greenlanders' attachment to the land.

Paying land lease fees could effectively decrease the number of abandoned buildings, as it would burden the owners financially. This could decrease the number of abandoned buildings and increase the number of plots returned to the municipality, allowing more individuals to build on those plots. There would be less urban sprawl, to the benefit of the environment and nature in Greenland.

Preface

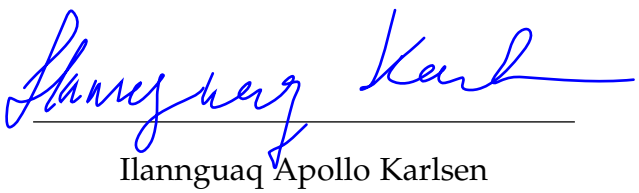
This Master's thesis targets individuals interested in physical planning and land management regulation for buildings on leased land in Greenland and Europe.

The project was prepared by Ilannguaq Apollo Karlsen during the 4th semester as a 30 ECTS Master's thesis at the Department of Sustainability and Planning, as part of the Master's program Surveying and Planning at Aalborg University Copenhagen. The project was undertaken from November 1, 2023, to March 8, 2024.

I want to express my gratitude to all the Department of Sustainability and Planning staff members for their support and assistance throughout my education. It has been an enriching and enlightening experience.

Throughout the project, I was fortunate to receive guidance from my supervisor, Daniel Galland, from Aalborg University. I want to express my sincere thanks to Daniel Galland for his support and guidance throughout the project.

Aalborg University - Copenhagen, March 8, 2024



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1 Introduction

Greenland is a unique place where the Arctic and the Nordic regions meet, making it an intriguing area to explore the relationship and interdependence between Greenland and the Nordic countries. This position makes it a fascinating area to delve into the complex relationship and interdependence between Greenland and the Nordic countries. Greenland shares its history and culture with Nordic countries, and they have been working together for years on issues such as trade and environmental concerns. However, in recent times, there has been a growing concern among Greenland's government that they need to be valued more as a member of the Nordic Council (Naalakkersuisut, 2023b). This has led to the consideration of leaving the council, further emphasising the importance and complexities of the relationship and interdependence between Greenland and the Nordic countries.

Greenland has been affiliated with European countries due to its connection to the Danish kingdom for over 300 years. This project aims to study and identify significant historical moments in the development of Greenlandic settlements and how they relate to the progress in the Nordic region. Greenlanders were once nomadic people who relied on hunting and fishing to survive and did not have permanent settlements 300 years ago. However, Greenlanders have developed permanent settlements today and continue to rely on hunting and fishing, which remain vital to Greenland's culture and economy.

Greenland has a unique collective land ownership system due to its vast land area and low population. This system has allowed the people to maintain their traditional way of life and rely on the land for their livelihood. Unlike the countries under the European Union that have developed regulations to protect natural resources and have high participation in nature conservation societies, Greenland has a nonexistent community for nature conservation and only has outdated nature conservation laws.

The Land Registration Act for Greenland is still under Danish rule and has not been updated since 1989. Because of the outdated Land Registry regulation, Greenland still has to handle cases manually, unlike Denmark, where the Land Registry was digitised in 2009.

In 2022, the Danish Ministry of Justice concluded that the Land Registration Committee had not finished its work due to the inability to reach a consensus on what

should be considered real property in Greenland for land registration (Ministry of Justice, 2022, p. 2). There is also a debate on whether mortgages should be allowed to be created on land use rights. The Danish government's hesitance to recognise real property in Greenland, coupled with the Greenlandic government's lack of request to modernise the regulation, can hinder the ability of Greenlandic property owners to apply for mortgage loans.

A digital system for registering land use rights can significantly enhance property management practices. This is because no public online access to the Land Registry currently exists, and manual registrations can be prone to errors. However, connecting the Greenlandic area allotment register with the Land Registry is currently not feasible.

The future of Greenland's land management practices is being evaluated. The country faces a dilemma between preserving its cultural heritage and adapting to a market-driven, private land ownership system. This project explores the need for change and examines the factors driving the desire to maintain traditional customs. Greenland's Land Administration can benefit from recognising that land and building ownership can be separated vertically. This would allow for privatisation while affirming the collective ownership of land by the people.

1.0.1 Physical planning and land use in Greenland

The vast expanse of Greenland presents an intriguing prospect for planners. Unlike Denmark, where land scarcity is common, Greenland's unique collective land ownership model offers a distinctive opportunity. Here, the land is not owned by individuals or corporations but collectively by the people of Greenland through land use rights. This free-of-charge model starkly contrasts the private landownership prevalent in many other countries. It allows planners and stakeholders to conceive imaginative and ambitious plans unfettered by land restrictions and private land ownership. However, it is essential to remember that the costs associated with developing a site in Greenland, such as high material costs and expensive site development, can be significant due to the remote location and harsh climate.

Nonetheless, the fact that municipalities do not have to pay anyone to take possession of the land is a significant advantage, providing an opportunity to work on ambitious projects. On the other hand, there is little regard for nature to be kept as a natural resource due to the argument about the sheer size of land available in

Greenland.

For example, every plot of land is considered publicly accessible in Greenland, and this can be interpreted as meaning that there is no concept of private parking. This means that any asphalted parking space cannot be deemed private, as the work done on the land is not exclusionary; one must have built a carport or a garage near one's house to use the parking space exclusively. This unique aspect of Greenland's land use policy means there are no parking fees or land leases for parking in Greenland.

The land use rights in Greenland, administered by the Greenlandic municipalities, come with challenges. The Planning Act provides municipalities with tools to reclaim land use rights that are no longer used. However, the term end-of-use needs a precise definition, which can be understood as the point when a building is no longer functional or habitable. This ambiguity and the municipalities' limited control have led to significant challenges. Building owners often leave the buildings in decay, feeling no obligation to restore them to their original state before there was a building. This situation is causing concern and urgency and needs to be addressed effectively. These buildings that exist only to be demolished may strain the municipality's economy since the building owner has not taken responsibility for taking down their building, and the municipality has to pay for the demolition before the plot can be built on again. The criteria for identifying buildings that are no longer in use need to be clearly defined. Currently, municipalities only require that buildings be used following the land use plans for the area. They will deny a building owner's application to change the use of a building from residential to commercial if the plans are for a residential area.

Greenland's unique collective land ownership necessitates a comprehensive approach to physical planning. It requires considering the social, economic, environmental, cultural, and communal aspects of land use. With Greenlandic society's collective needs and aspirations, the local community plays a pivotal role in this process. Their knowledge and perspectives are invaluable in ensuring the sustainable use of the land and fostering a sense of community and collective responsibility. Their active participation in the planning process can lead to more effective and sustainable land use, as they are the ones who understand their needs and the land's potential the best.

However, the downside of this arrangement is that the government and the municipalities are the driving force of growth, an inherited problem encountered in the

Danish modernisation of Greenland. That has resulted in little private engagement from the Greenlandic community. Furthermore, the Greenlandic people's entitlement to land ownership can undermine the planning system.

The government of Greenland has taken steps to develop the country as a tourist destination by constructing new international airports. One airport in Nuuk, the capital city, will open in late 2024. The other airport is in Ilulissat, a popular tourist destination, and is scheduled to open in 2025. However, the focus on tourism in Greenland clashes with the sight of buildings in decay with boarded-up windows. Additionally, developing bare land for new buildings is more expensive than demolishing existing buildings in decay, which already have the infrastructure in place.

Using as much land as possible in Greenland while respecting nature could be justifiable, given that the Greenlandic government has established the world's largest national park in North East Greenland, covering an area of 879,000 km^2. Who will defend nature when there is so much nature everywhere other than where the urban settlement or building will be located? Additionally, there may be concerns that Greenlanders have an unhealthy relationship towards nature as a resource just for the taking in land use, hunting and fishing, or simply abandoning buildings no longer in use.

1.1 Problem statement

The effective management of leasehold land is critical in shaping land use, development, and sustainability in both urban and rural areas. However, the impact of leasehold systems on physical planning in various geographical, cultural, and environmental contexts requires further investigation. This research aims to address this issue by exploring and understanding the impact of leasehold on physical planning.

The project will use the problem statement as a framework to evaluate the findings. It will discuss how collective property rights can impact a country's development and approach towards nature. Specifically, the project aims to conclude how Greenlandic property rights, based on traditional land use practices, affect planning through the two unwritten principles of the first right of utilisation and the holder's right.

The analysis will provide a comprehensive understanding of how land administration influences land use and development in Greenland. The project aims to evaluate how Greenland can effectively manage these challenges by utilising established

property administration systems and drawing insights from European countries such as Norway and the Netherlands. This will benefit the recognition of leasehold management in Greenland in the Danish Mortgage Act, as land use rights in Greenland have yet to be registered in the Land Registry.

Since Norway and Denmark are closely related countries, comparing and contrasting their approaches to leasehold management is interesting. The Netherlands is also a relevant example, given its leasehold approach, where the municipality acquires and leases the land.

The goal is to demonstrate to the Danish Land Registration Committee for Greenland that the traditional land use management in Greenland is on par with the leasehold land in Europe. This recognition should be made legally, and as a result, land use rights should be able to be registered in the Land Registry.

This research seeks to address the following problem:

How can leasehold management affect land use and development in Greenland?

1.1.1 Research questions

- What is the genesis and evolution of leasehold management in Greenland?
- How can Greenland be informed by what is happening in other European countries regarding leasehold management?
- How can the land in Greenland be managed to ensure its efficient utilisation and enable the reclamation or sale of buildings that are no longer in use?

The first research question investigates the history and development of land administration in Greenland to establish a common understanding of real property. This will facilitate the clarification of certain concepts or phenomena, as it is not widely recognised internationally that private property rights exist in Greenland.

The second research question focuses on how Greenland can derive insights from leasehold management practices in European countries, where individual property rights and public interest in physical planning intersect. The study examines the legal and regulatory frameworks governing leasehold agreements in various European contexts and their implications for balancing property rights and community interests. By evaluating how these frameworks address public concerns, the study aims to

provide insights into leasehold management practices in Europe and their potential contributions to Greenland's land administration.

The third research question explores ways land administration in Greenland can be more equitable with economic development, preservation of traditional land use practices, and conservation of natural resources. When an individual or business owner constructs a building, it takes away a part of the collectively owned land, depriving the community of its property. Failure to return or demolish the building after use would violate the agreement. This creates a conflict between traditional property rights and the Western mindset of property as a private good. The study will also investigate how such practices can benefit local communities, infrastructure development, and overall economic growth while promoting sustainable and equitable prosperity.

2 Theoretical framework

In order to illuminate the project's issues and foster a deeper comprehension of the associated subjects, the project delves into a range of concepts, phenomena, and theories. Presented below, these provide a framework for the analysis and discussions that will take place throughout the project.

2.1 ASID and Path Dependence

The agency, structure, institutions and discourse heuristic (ASID) model aids in analysing how socio-economic development is regulated at different spatial scales. ASID is composed of four main dimensions. The first dimension, structure, refers to the relatively stable development circumstances. The second dimension, institutions, refers to organisations, rules, and practices that either facilitate or constrain policy in a particular field. The third dimension, agency, refers to all influential human action, and the fourth dimension, discourse, refers to the process of making meaning (Suitner, 2021, p.883). The ASID model emphasises the importance of specific planning stages, and their connection to the development of cities reveals notable features and discrepancies across different periods (Suitner, 2021, p.883).

Path dependence refers to how past decisions can shape present and future outcomes. On the other hand, critical junctures are pivotal moments that create opportunities for change. The concept of path dependence suggests that certain institutions become progressively more challenging to change over time once they are established. This means that minor choices made early on can have significant long-term effects. This idea is central to historical institutional analysis. If certain institutions are path dependent, it is crucial to understand the factors that contribute to their continuity and the critical junctures that led to the formation of new institutions (Sorensen, 2015, p.21). Understanding the interplay between path dependence and critical junctures is essential for effective planning and sustainable development in Greenland.

Institutions go through significant changes at certain times, which is widely accepted. Many countries experience similar phases while developing their institutions, such as implementing contemporary land-planning systems or financialising property markets. Therefore, it becomes crucial to consider the timing and order of these pivotal moments along with other institutional, economic, and political ad-

vancements (Sorensen, 2015, p.26). Establishing strong land development regulations during the early stages of urbanisation can significantly impact a country's future experience compared to those that do not (Sorensen, 2015, p.26). Such regulations can cover aspects of urban development such as zoning, building codes, environmental protection, and infrastructure planning. By implementing these measures before urbanisation, countries can ensure that their cities grow sustainably and equitably. Effective land development regulation can improve residents' quality of life and reduce strain on resources and the environment.

Urbanisation without proper planning can lead to several challenges, such as overcrowding, inadequate infrastructure, environmental degradation, and social inequality. In some cases, countries follow the planning laws inherited from colonial authorities with minimal modifications, which worsens these issues. Therefore, countries must prioritise land development regulations early to ensure sustainable and equitable urbanisation (Sorensen, 2015, p.27).

2.2 Indigenous Planning

Indigenous planning has gained traction in areas where the Western approach to planning intersects with the Indigenous way of life. According to the United Nations, indigenous or native peoples inhabited the land before colonisation, identified as descendants of those peoples, and belonged to a socially, culturally, or politically governed institution. Indigenous planning is defined as: *'Indigenous people making decisions about their place (whether in the built or natural environment) using their knowledge (and other pieces of knowledge), values and principles to define and progress their present and future social, cultural, environmental and economic aspirations'* (Matunga, 2017, p. 642).

In order to discuss a Greenlandic approach to planning, it is vital first to understand the challenges Greenland faces. After becoming a county in Denmark, the development that has taken place in Greenland was aimed at improving living standards and adopting the Danish welfare state. Although Greenlandic politicians were in charge, the modernisation was rushed and created a society that did not resonate with the culture of Greenlanders. The planning needed insight into the Greenlandic culture, and the methodology used to assess business development potentials needed to be revised, which created challenges for the Greenlandic community.

In a parliament debate, the premier of Greenland held a speech about the worldview of Greenlanders and Inuit. The following shows a part of the speech. "*Inuit*

cosmology made no distinction between the living, such as humans, animals and plants. Everything that could breathe and die was the definition of Inuk, whether we were animals, plants or humans. Tarneq, the soul, was immortal and travelled from animals to humans, the sea, the rocks and the mountains. We were not divided by species, ethnicity or gender. The soul was the same, just in a different physical form." (Naalakkersuisut, 2022, p. 1)

In the eyes of the ancient Inuit community, nature held the same level of significance and value as the inhabitants of Greenland. However, this holistic perspective is not reflected in the Planning Act, which is grounded in an ideology passed down from Danish governance in Greenland.

In Greenland, the term 'pilersaarusiorneq' refers to planning. However, this term may have negative connotations for some individuals due to past experiences where economic planning led to the closure of Qullissat and Umanak (old Thule) following demands from the US. While such closures resulted from Danish policies, they significantly impacted the people of Greenland. Consequently, the phrase 'Nunaminertanik atuineq,' used for a land use permit, can also carry a negative connotation. This terminology promotes a consumeristic approach to land use and can foster a mindset that land is a resource to be exploited rather than a space for coexistence and preservation.

The indigenous approach to planning emphasises traditional ownership of land and maintaining a unique cultural worldview (Jojola, 2008, p. 37). Indigenous communities share knowledge through oral storytelling, which differs from the Western approach to knowledge exchange. However, initiatives can still succeed in Greenland if carefully planned, considering Greenlandic cultural values.

Greenlandic society has changed significantly from its past as a nomadic hunter society. The people of Greenland believe in passing on better living conditions and standards to their future generations, which aligns with the concept of sustainability defined by Brundtland. Their respect for traditions is evident in their way of life, which includes annual hunting retreats like Aasivik in West Greenland for reindeer hunting in Nassuttooq. This lifestyle is highly seasonal; even today, society is characterised by this seasonal behaviour. During the reindeer hunting season, construction workers have more freedom. The indigenous planning methodology focuses on the next seven generations and aligns with the European approach to land use planning, including zoning and distribution of land use rights. Unfortunately, paternalistic governments and missionary approaches have hindered the development of local

capacity for self-governance, instead promoting practices that assimilate tribes into Western ways of life, creating dependency (Jojola, 2008, p. 41).

2.3 Land administration

Land administration is a crucial process that involves managing information related to land ownership, value, and utilisation, along with its resources. A land administration system is responsible for recording, preserving, and providing access to information that establishes tenure security and helps the land market. The identification and documentation of land are essential to ensure proper use under the authorities' intentions. This can be done through formal procedures, traditional behavioural patterns, or internalised norms and rituals. Land administration involves initiating, controlling, and executing different tasks to achieve specific goals (UNECE, 2004, p. 5), (Røsnes, 2014, p. 17).

The process of ownership is primarily a legal one that relies on 'title,' which is the evidence that establishes who has the property right. The land tenure system, which defines how land rights are held, depends on this. The most common forms of land tenure are freehold and leasehold. Freehold is the most comprehensive tenure system, granting the owner maximum rights, subject to constraints, such as those imposed by physical planning regulations. The State also retains the right to acquire the land in the national interest, which is sometimes known as the right of eminent domain (UNECE, 2004, p. 5).

A leasehold is established when a landlord (the lessor) grants a tenant (the lessee) the exclusive right to occupy the land for a specified amount of money and duration through a contractual agreement. Although such extended leases are now uncommon, up to 99 years remain typical (UNECE, 2004, p. 5).

However, ownership is not the only aspect of land administration. In constitutional states, there must be legitimate perceptions of the spatial and institutional boundaries of the domain before land can be managed as an object of use and utilisation. This requires a legal basis that defines the spatial and temporal limits of the dominion, including rights and authority, rights of use and utilisation, and jurisdictional boundaries (Røsnes, 2014, p. 17).

Natural areas provide the conditions for human habitation, travel, and utilising natural resources. Therefore, it is a prerequisite for meeting human needs. The built-up area, which is a part of human settlement, requires the use of natural re-

sources. The right of individuals to use land and land-related property is protected by international human rights law through the UN Declaration on Human Rights and the Environment. This declaration guides the governments in managing natural resources sustainably and ensuring that citizens have access to land resources and property to maintain acceptable living conditions (Røsnes, 2014, pp. 16-17).

European land administration systems have historically focused on meeting the state's and other authorities' financial objectives. The rise of real estate as a commodity has brought new challenges to land administration, including the need for more precise identification and documentation of property rights, particularly in urban areas. Land administration is crucial for physical planning, as it helps manage property use and development. Property rights can also be used to manage environmental development and negotiate contracts (Røsnes, 2014, pp. 23-24).

Common or collective ownership, known as customary property, is often not considered private property. However, the distinction between private rights and public interests still holds because the crucial factor for physical planning, implementation, and control is whether the government owns the land. If the government does not possess the land, it does not matter whether it interferes with an individual or collective property right. In certain nations, the legitimacy of governmental declarations to designate traditional lands as State-owned is frequently disputed (van der Molen, 2015, p. 180).

3 Methods

This section describes the project's methodology, analysis methods, and empirical data collection supporting the analyses.

This project examines and compares how public land administration impacts physical planning in Norway and the Netherlands. The study will focus on how these countries have developed their practices and whether they benefit their citizens. Additionally, the research seeks to determine if these practices can be applied to Greenland to improve land management and land use. The study will utilise the ASID model, path dependence, indigenous planning, and land administration as analytical parameters.

3.0.1 Document analysis

To gather qualitative data, document analysis involves scrutinising various written materials, including legal documents, news articles, websites, images, and other sources. Literature review, including laws, is utilised to ascertain the necessity for ground lease administration in Norway and the Netherlands. Analysing these documents can lead to understanding how to efficiently identify and manage ground leases in Greenland, which will ultimately enhance land administration and property management for the people of Greenland (Gross, 2018, p. 544). Regulatory texts, research articles, and books about land administration will be selected for the study. Books include "Arealadministrasjon" (Røsnes, 2014) from Norway and "Og så vender vi kajakken?" (Skjelbo, 1995) about settlement, planning and land administration in Greenland, and "Making the Arctic City" (Hemmersam, 2021) about planning in the Arctic. Articles include "The Dutch urban ground lease: A valuable tool for land policy?" (Ploeger & Bounjouh, 2017) and "A Revolutionary Pedagogy of/for Indigenous Planning" (Matunga, 2017). The selection criteria for the information should be the latest and primarily relevant to planning and land management.

3.0.2 Comparative analysis

Comparative analysis of land administration and physical planning in Greenland, Norway, and the Netherlands is essential to understanding how each country manages land resources, urban development, land use regulations, infrastructure plan-

ning, and environmental considerations. This analysis evaluates legal frameworks, administrative structures, policy instruments, stakeholder engagement approaches, and technological innovations used by each country. By comparing these aspects, one can recognise the best practices, challenges, and opportunities for knowledge exchange and improvement, which can ultimately aid in developing more efficient and long-lasting land management strategies on a global scale.

3.0.3 Caveats and limitations

I have worked for three years as a project manager and special advisor in the Department of National Planning of the Government of Greenland. During my tenure, I focused on modernising the Planning Act and worked closely with the planning departments in the municipalities to address their planning challenges. I was also responsible for designing the open data program's Arealregister (area allotment register). The department has a Board of Appeals that handles cases where citizens or companies appeal an application denied by the municipalities. Even though I am no longer an employee, I still work with the department as an external consultant, handling appeal cases and general questions about the Planning Act. Due to my extensive knowledge and experience in planning in Greenland, my professional assessment is sometimes incorporated without citation since I am the source of that knowledge.

Danish laws heavily influence the laws of Greenland. Hence, the analysis section on Greenland will mention Danish provisions. The Danish government regulates certain areas, such as the law on contracts and other legal transactions related to property, which the Danish Ministry of Justice oversees. Therefore, it is essential to establish links to the Danish legislation.

I attempted to contact experts in land administration from Norway and the Netherlands through a professor at Aalborg University for a semi-structured interview. Unfortunately, my attempts to contact knowledgeable individuals in these countries were unsuccessful. Additionally, I arranged a meeting with individuals from the Greenlandic Ministry of the Environment to conduct a semi-structured interview on the interaction between planning and environmental legislation during my stay in Nuuk at the start of February. However, my efforts to establish this meeting were also unsuccessful.

4 Data collection: Leasehold governance in Europe

The efficient management of land resources plays a vital role in achieving sustainable development. It requires robust frameworks for land administration, physical planning, and environmental legislation. This chapter discusses the land administration systems of Denmark, Norway, and the Netherlands, emphasising their leasehold land management practices.

4.1 Land Administration in Denmark

This section briefly introduces land administration in Denmark regarding leases of land (bygninger på fremmed grund).

In Denmark, buildings on leased land are typically used as holiday homes or allotments, commonly known as 'kolonihaver'. These recreational homes can be seasonally inhabited from the beginning of April until the end of September. In the case of allotments, the land is owned by either a municipality or a private company, which then leases the land to an owner's association. The owner's association is responsible for administering the leasehold contract for each parcel within the leased land.

During my third semester, I worked on a project related to leasehold management in Denmark. The project was completed during my company stay at the Danish Geodata Agency, Denmark's cadastral authority. On January 1st, 2024, amendments to the Registration Act and the Subdivision Act[1] related to leasehold land came into effect. These amendments were made to help achieve the Danish Open Data goals by collecting the registration of three types of Danish properties: parcels (samlet fast ejendom), condominiums, and buildings on leased land in the Danish Cadastre.

I investigated how the Cadastre's registration of buildings on leased land could improve data accuracy in the Building and Housing Register (BBR) and Land Registry. Additionally, the project aimed to understand the reasons behind registering real property in the Cadastre and the impact of discrepancies between the registered and actual buildings in the real property registers.

[1] Danish Act no. 1556 of 12/12/2023 on amendment of the Act on subdivision and other registration in the Cadastre and the Land Registration Act

The Danish authorities created a new unique property identifier called 'bestemt fast ejendom' (BFE) that creates a link between the Building and Housing Register, Land Registry and the Cadastre.

In Denmark, there was a challenge with registering and regulating leasehold land before the Open Data Programme was introduced (Karlsen, 2023b, p. 20). Freehold parcels are registered in the Cadastre, but the municipalities manually registered buildings on leased land and condominiums in a separate register called 'ESR'. This was done to ensure that the tax authority is informed of all actual changes in ownership, even if they are not registered in the Land Registry (Karlsen, 2023b, p. 22).

This practice was necessary to ensure that tax liabilities reflect the actual ownership. The municipalities systematically register any change in the ESR as soon as changes occur on a property to calculate and collect property tax and other charges associated with the property. This ensures that their information is current and accurate, essential to guaranteeing correct tax obligations and other financial contributions associated with the property (Karlsen, 2023b, p. 22).

One of the challenges with the Land Registry is that it only lists the registered owners, who may sometimes be the actual property owners. Registered owners are those who have officially registered their ownership of the property. However, it is only sometimes mandatory to register changes in ownership unless there are legal dispositions or actions related to the property that must be registered. As a result, there are situations where ownership can change hands without being registered, such as when property transfers occur in connection with the sale of a business or in cases where a widow or widower is in an undivided estate (Karlsen, 2023b, p. 22).

The Danish Geodata Agency has been working on integrating buildings on leased land since 2019, after taking over the registration of buildings on leased land from ESR to the Cadastre. The agency aims to comprehensively overview the number of buildings on leased land registered in the various registers. According to the Danish Geodata Agency, there are 57,000 buildings on leased land registered in the Cadastre, 41,000 buildings on leased land registered in BBR, and registered rights over 24,000 buildings (bygningsblade) on leased land in the Land Registry. However, due to the lack of harmonisation between the registrations in BBR, the Cadastre or the Land Registry, and the inconsistency in the processes followed across the registers, the Danish Geodata Agency has not been able to determine the exact number of buildings on leased land (Karlsen, 2023b, p. 23).

The Danish Geodata Agency discovered that approximately 6,500 buildings on leased land are registered in the Land Registry but not in the Cadastre or BBR. This discrepancy has led to various issues, such as inaccurate property valuations based on data from the Cadastre and BBR and difficulties for surveyors and others needing to correctly identify a building on leased land (Karlsen, 2023b, p. 23).

The registration of a building on leased land requires cooperation between multiple stakeholders, such as building owners, land owners and authorities, to ensure efficient property registration and management. At the same time, a lack of coordination can lead to inefficiencies. The Danish Cadastre is the legal foundation for property registration and the core of a land administration system. Registering buildings on leased land requires clarity and standardisation to ensure clarity and consistency in property information and registrations (Karlsen, 2023b, p. 43).

In Denmark, there is no specific act that governs ground leasing. However, certain acts, such as the Holiday Homes on Leasehold Land Act[2], regulate the determination of rent at the beginning of the rental period and any adjustments made during the rental period. The length of the leasehold land is regulated by section 16 of the Subdivision Act[3], which sets a maximum lease period of 30 years. The right of use agreement is a contract between the land owner and the building owner. Section 19 of the Land Registration Act[4] provides leasehold building provisions, allowing the building owner to mortgage his or her building.

4.2 Governance in Norway

This section focuses on the planning regulations and land administration in Norway, particularly emphasising the leasehold system. It is important to note that Norway is not a member of the European Union, similar to Greenland. Therefore, it is essential to understand how the Norwegian land management system has developed and how the country regulates the preservation of natural resources in urban areas without following the EU's land conservation directives that Denmark and the Netherlands comply with.

In Norway, a right of public access exists, a counterpart to property rights and other similar rights that ensure that the land is accessible to the public. This right is

[2]Danish Act no. 262 of 24/03/2013 on Holiday Homes on Leased land

[3]Danish Act no. 53 of 17/01/2024 on subdivision and other registration in the Cadastre

[4]Danish Act no. 1075 of 30/09/2024 on land registration

governed by the Outdoor Recreation Act[5] and is limited to certain types of travelling, staying, and harvesting for the general public. Public access is not a unique exclusive right, unlike property or special rights. However, it is an essential limitation to the negative exercise of actual ownership rights. In most situations, it is not permissible for property owners to construct fences or other barriers that would restrict access to the perimeter of their property for the general public (Røsnes, 2014, p. 54).

4.2.1 Land Administration in Norway

Norwegian municipalities manage property registration through a cadastral register, a Land Registry, and a planning register. The first systematic cadastre was created in 1665 and digitised in the 1980s. In 2005, a new property register, Matrikkelen, replaced the GAB register and municipal property maps. The cadastre is a central database at the Norwegian Mapping Authority that integrates property data, property maps, and public land use restrictions (National Survey and Cadastre of Denmark, 2006, pp. 204-205).

Private property rights in Norway extend upwards and downwards if the owner has an economic interest. The subsoil has traditionally been regarded as ownerless land, but since 1990, municipalities have accepted dividing volumes below or above ground level as separate properties. These "volume properties" can only be created if a building permit has been granted for the facility (National Survey and Cadastre of Denmark, 2006, p. 211).

Leasehold in Norway

Leasehold land in Norway is a property leased for housing or a holiday home, with the leaseholder owning the building but leasing the land for 99 years with the possibility of renewing the lease. The leasehold rights for building construction must be matriculated for more than ten years. There are around 180,000 leasehold plots in total, and revising the law on leaseholds in 2005 gave leaseholders a greater right to buy the land. Spot leases are leaseholds with no clear boundaries, and an entire property can also be leased (National Survey and Cadastre of Denmark, 2006, p. 211).

Leasehold land, in Norwegian *Festegrunn*, is a more precisely defined part of leased property. Spot leases are a subcategory of leasehold land, particularly for holiday homes (Røsnes, 2014, p. 70). Spot leases are leased areas without fixed

[5]Norwegian Act no. 16 of 28/06/1957 on outdoor life

boundaries. The leasehold right relates to an approximate area (e.g. approx. 1,000 m^2) around a specified point that is fixed (National Survey and Cadastre of Denmark, 2006, p. 210).

During the Middle Ages, Norway established land leaseholds modelled after similar agreements in cities across Germany and England. These leaseholds were a common practice in Europe nearly a thousand years ago and were primarily used for leasing land for housing purposes (Jetlund, 2008, p. 2). An estimate from 1988 suggested that there were about 250,000 leasehold sites in Norway, of which around 100,000 were utilised for housing purposes and nearly 90,000 were leased for cabin purposes. As per a subsequent estimate in 1996, the number of registered leasehold sites had increased to 350,000. This increase in numbers is attributable to improved statistical material and the establishment of new agreements (Jetlund, 2008, p. 2). The effect of the large number of instances makes that many Norwegians have some relation to land leasehold. Most are leaseholders, and many leasehold contracts have prominent private or public authorities as property owners (Jetlund, 2008, p. 2).

Sometimes, a municipality in Norway may lease a large area and then sublet individual sites within that area to its inhabitants for housing purposes. However, smaller areas such as roads, playgrounds, and recreational spaces must be regulated and developed accordingly. It is essential for the municipality to clearly define its role as the authority responsible for preparing basic infrastructure, such as public roads, water supply, and drainage for the inhabitants, separate from its role as a lessor (Jetlund, 2008, p. 6).

4.2.2 Planning and leasehold regulation in Norway

The Planning and Building Act[6] is a legislation that plays a vital role in managing and utilising land resources in Norway. It provides a comprehensive framework for guiding land-use decisions, including planning, zoning, and development activities across the country. The Act sets out the legal requirements that must be met before any construction or development work can take place, ensuring that all projects are carried out safely, equitably, and sustainably. Overall, the Planning and Building Act is essential for promoting responsible land stewardship and ensuring that Norway's natural resources are used wisely and effectively.

[6]Norwegian Act no. 71 of 26/07/2008 on planning and building case processing with the latest amendment in 2023

Section 1(8) states that within 100 meters of the sea and watercourses, special consideration should be given to the environment, outdoor activities, landscape, and public interests. Section 1(6) measures, except for facade changes, cannot be implemented within 100 meters of the shoreline. However, subdivision related to the redemption of a developed leasehold plot under the Site Leasehold Act is allowed. The preparatory work to the Planning Act states that the rules of the Leasehold Act on the right to redeem a leasehold plot are not set aside by the provision prohibiting building along the sea.

Section 3(1) states that planning should promote a holistic approach by ensuring coordination and cooperation between various sectors, authorities, and organisations. It should also consider financial and resource constraints while aligning with international conventions and agreements within the scope of the Act.

Leasehold act

The Act on Ground Lease[7] pertains to the lease of land used for a house that the tenant either has or will have on the plot. This Act also covers the right to use the land for roads, car parking, gardens or any similar usage in connection with the houses on the leasehold plot. Moreover, this act applies to particular rights of usage that the owner of the leased property has over other lands and has transferred to the lessee, as long as the legal relationship between the tenant and the owner is concerned.

Section 2 of the Ground Lease Act states that the act applies to lease agreements, regardless of whether they were entered into before or after the law came into effect. However, there may be exceptions to this rule that are stated in the law or can be inferred from the context. For example, the law may only apply to new lease agreements after 1975. Even if an older lease agreement was extended by an agreement after this date, the law may still apply if it is apparent from the context or explicitly stated in the law.

Section 5 of the Ground Lease Act states that leasehold agreements must be in writing and state the purpose and value of the plot. The parties are nevertheless deemed to have bound themselves to each other when payment has been made and received for the leasehold or when the leaseholder, under an oral agreement, has taken over the leasehold without objection from the landlord by undertaking work on the plot or in some other way. A written agreement is required. The lessor must

[7]Norwegian Act no. 106 of 20/12/1996 on ground lease with the latest amendment in 2022

file for a revised cadastre entry. The Sale of Property Act applies to costs unless stated otherwise.

If a leaseholder has a contract for housing or cabin purposes, and nothing else is agreed upon, they have complete control over the leasehold site. This is stated in section 16 of the Ground Lease Act. However, the leaseholder's ability to dispose of the property is limited by legislation. For example, they cannot sell the property or take any legal action related to it. Nonetheless, they can use it as collateral for building loans, and any buildings or constructions they place on the site are included in any mortgage. As per section 18 of the Ground Lease Act, a mortgage on a leased property includes any buildings or constructions on the site. Most lease agreements for housing purposes stipulate long-term use, usually lasting between 50 and 100 years. Section 7 of the Ground Lease Act states that new or extended contracts are valid until the leaseholder terminates the agreement or buys the property (Jetlund, 2008, p. 3).

Lease contracts typically include an agreement for rental adjustments after a certain period, such as every 10, 20 or 25 years (Jetlund, 2008, p. 4). This clause ensures the owner can maintain their yield based on the property as a tied-up capital. Section 15 of the Ground Lease Act grants the parties the right to request a rental adjustment based on changes in the national price index since the last adjustment or since entering the agreement. If the contract specifies a different method for calculating adjustments, then a rental adjustment can still be made based on the contract. However, certain conditions must be met, such as having an agreement for housing and cabin purposes signed before January 1st, 2002, and the adjustment can only be carried out once. This is stated in the second part of section 15. Rental adjustments for non-housing purposes follow the same main rule. However, there are no restrictions on when the agreement was established or the number of possible value adjustments, as stated in the contract. If the leaseholder and property owner agree to a rental adjustment based on market value, a valuation price must be obtained, as the Ground Lease Act allows. The leasing rental calculation is based on two components: estate valuation and leasing interest rate, with the interest rate reflecting the owners' demand for yield based on an alternate placement of capital equivalent to the property's market value at the time of regulation (Jetlund, 2008, p. 4).

Valuation and redeeming leasehold land

Under the Ground Lease Act, a Leaseholder can buy or redeem their site after 30 years and every second year after that. Redemption must be requested in writing within a year before the end of the redemption period. The redemption amount is generally 30 times the annual leasing fee, but an exception can be made if specific requirements are met. In cases where the leasing fee is regulated in ways other than changes in the national price index, a valuation price must be obtained for redemption (Jetlund, 2008, p. 4).

Valuating leasehold sites can be challenging due to the lack of available market prices for sites with established agreements built on for a long time. Disagreements often arise between the property owner and the building owner on the actual market price, primarily if the site could have been sold independently of the building. This is because there is no open market for trading leasehold sites, as there will usually be only one actual purchaser: the building owner (Jetlund, 2008, pp. 4-5).

In most cases, when there are disputes about the value of a property, a valuation expert is hired to determine the leasehold site's actual worth. However, comparing the value of leasehold sites is usually tricky because they are rarely sold without the buildings on top of them (Jetlund, 2008, p. 5).

It has been observed that there are instances where mountain cabins are traded at exorbitant prices due to their desirable location and proximity to water bodies. Despite being on the verge of demolition, these cabins have been sold at very high rates, indicating the significant value of their location to the building owner. This trend highlights the increasing worth of such sites and the potential benefits of owning properties in such sought-after locations (Jetlund, 2008, p. 6).

Environmental protection

The Act on the Management of Nature's Diversity[8] has been created to ensure the preservation of nature, including its biological, landscape, and geological diversity, ecological processes, and sustainable use. The primary objective is to provide a foundation for human activities, culture, health, and well-being, both presently and in the future. The Sami culture is included as a basis for this preservation as well.

The preservation of nature in Norway encompasses several domains, which in-

[8]Norwegian act no. 100 of 19/06/2009 on the Management of Nature's Diversity with later amendment in 2022.

clude designating protected regions like forests, national parks, and county protection plans. Other significant facets involve safeguarding large carnivores and other fauna, managing invasive species, overseeing wild salmon and freshwater fish, and analysing environmental concerns related to the agricultural, energy, and aquaculture industries. The Department of Nature Management is accountable for environmental risk evaluations concerning using genetically modified organisms (GMOs), supervising motorised vehicles in nature, and charting the environment. The Department of Nature Management is responsible for ensuring that Norway conforms to global agreements on biodiversity, such as the UN Convention on Biodiversity, the Cartagena Protocol on GMOs, and the Nagoya Protocol on genetic resources. The Department of Nature Management also coordinates efforts related to international covenants on nature diversity, such as the United Nations Environment Programme, the Intergovernmental Platform on Biodiversity and Ecosystem Services, and NASCO (Government of Norway, n.d.).

The Norwegian biodiversity action plan aims to maintain 'good ecological status' by sustaining the country's nature management regime and controlling pressure from human use. An expert committee was established by the Norwegian Ministry of Climate and Environment in 2016 to develop scientifically based criteria to determine good ecological status. It is based on the idea that well-functioning ecosystems benefit society and that Norwegian society should pass them on in a healthy state to future generations. Achieving good ecological status is not necessarily the objective everywhere, as other public interests may weigh more heavily, such as land-use objectives, industrial uses, and pressures not under national control, like climate change and long-range transport of pollutants (Schneider et al., 2017).

4.3 Governance in The Netherlands

This section provides an overview of the Netherlands' planning regulations and land administration, with a specific emphasis on the leasehold system. It highlights the municipality's role as a lessor in leasehold agreements. The selection of the Netherlands is due to the use of ground rent in Amsterdam municipality, which I learned while working at the Department of National Planning in the Government of Greenland.

4.3.1 Planning in the Netherlands

Interesting observations can be made regarding spatial planning, development, and control, which have arisen due to changes in governance philosophy introduced in the Netherlands in recent years. The decision to decentralise and deregulate spatial planning was generally made first, with the adage being "locally when possible, centrally when necessary." This has given decision-making powers to the government levels closest to the citizens, ensuring that the central government's role is only as extensive as necessary (van der Molen, 2015, pp. 182-183).

Spatial planning in the Netherlands has been integrated with a more comprehensive development policy that includes economic, ecological, and socio-cultural goals. The new policy establishes a foundation for negotiating multi-year agreements, including appropriate integrated investment funding. Good coordination is ensured by creating "structure visions," which define roles and assign freedoms to provinces and municipalities to implement these visions. The Town and Country Planning Act (1965) has been overhauled to become the Spatial Planning Act (2008), and the Land Use Law (1985) has become the Rural Planning Act (2007), which establishes relevant procedures and delegates central coordination to provinces (van der Molen, 2015, p. 183).

The Netherlands government is responsible for regulating the land use and is also a owner of land itself. State land management is an issue faced by many countries. The Dutch Government aims to ensure well-documented state ownership by utilising appropriate mechanisms for state land management. This applies to all government bodies, such as the central government, provinces, municipalities, water boards, and social housing corporations. In 2001, a Council for National Government Properties was established to oversee state land ownership. The Dutch Kadaster estimates that the government owns 25 per cent of the total land area (van der Molen, 2015, pp. 183-184).

The physical environment requires an integrated approach encompassing various aspects such as holistic economic development, water safety, resource utilisation, energy, housing, accessibility, agriculture, environment, nature, and cultural heritage. The Dutch government recognises differences in the physical environment, and it acknowledges that a rigid, centralised, non-integrated approach is not suitable for promoting environmental diversity (van der Molen, 2015, p. 184).

A government has the power to impose restrictions on private property rights. This means that if private owners intend to change the use of their land, they may need to obtain permits from the government first. Additionally, the government can influence land use through land taxation. However, the government cannot force citizens to use their land a certain way. The government's power is limited to prohibiting land owners from changing their land use to something noncompliant with the law (van der Molen, 2015, p. 185).

For example, if a municipality wants a plot of land to be developed into a residential area, it can designate the land for residential use in the zoning plan. However, the government cannot force the plot owner to construct a house on the land. In such cases, the only way for the government to achieve the desired land use is to become the land owner. This is known as the "public acquisition of land", and there are several ways to do it:

- Trying to buy the land right amicably (the willing buyer-willing seller principle),
- Imposing a preemptive right on the plot,
- Making the plot part of land consolidation, land readjustment, or land reform program,
- Expropriating the plot (van der Molen, 2015, p. 185).

4.3.2 Leasehold in the Netherlands

In the Netherlands, it is common for the local government to play an active role in developing and redeveloping urban areas. They acquire land for development, create a plan for the area, and then offer buildable plots to housing associations, development companies, or private individuals. This approach enables Dutch municipalities to maintain control over the development of an area and directly influence its future use. They can also allocate land to specific categories of users if necessary. This active land policy has several benefits, including ensuring sufficient land for future building demands (Ploeger & Bounjouh, 2017, p.78).

When someone has a Dutch ground lease, in Dutch *erfpacht*, they have a limited right to use land that belongs to someone else. The leaseholder has to pay a lump sum or periodic payment to use the property. The lease may be established for a limited period or indefinitely. The ground lease is established through a notarial deed and

registered in the Land Registry. The lessee can encumber it with a mortgage and transfer their right to a third party. The ground fee is based on the costs of attracting loan capital when the right is established (Ploeger & Bounjouh, 2017, p.79).

The right of a ground lease gives the holder the privilege to use the entire property of the lessor as if they were the owner. However, this use may be restricted. The conditions mentioned in the deed of the establishment will impose limitations on the usage of the ground, typically concerning a set of general conditions. This is a common practice for governments that utilise urban ground leases. For instance, when creating a new industrial area, the municipality may use a ground lease to restrict or limit the possibilities for specific forms of retail business and the type of industrial use in the area to prevent nuisance (Ploeger & Bounjouh, 2017, p.79).

This is one of the primary reasons municipalities prefer to lease land in urban areas rather than sell it. An often-used restriction is that the enjoyment of the land is limited to a specific type of land use, such as housing, industry, or commercial use (Ploeger & Bounjouh, 2017, p.81).

In the 20th century, ground leases were seen as an essential tool by liberals and socialists to prevent land speculation and enforce spatial policies. Four key factors drove municipalities' adoption of ground leases. Firstly, it helped facilitate urban planning by providing greater control over land use, which was particularly crucial given the lack of public law planning instruments at that time. Secondly, it made it possible to provide affordable housing by allowing developers, particularly housing associations, to pay a periodic ground fee instead of purchasing the land for its entire value. Thirdly, the ground lease was seen as a way to ensure that the community, rather than individual owners, benefited from any expected future increase in land value. By periodically adjusting the ground rent based on changes in the land value, it was possible to capture at least a portion of this increase and prevent land speculation. Finally, the ground lease served as a value-capturing instrument by requiring the lessor's permission for any changes in the building's volume or use, such as an additional floor or a change to commercial use. If such changes created a surplus land value, the ground fee could be adjusted before permission was granted. The municipality could use the extra income generated to make public investments necessary due to the changes in use, such as creating more parking space in the area (Ploeger & Bounjouh, 2017, p.81).

Ground leases can deliver land in many municipalities, though their significance

varies. Some cities use them exclusively, while others use them only in specific situations. Ground leases can be confused with land rental, but from an economic perspective, the leaseholder has 'economic ownership' of the buildings. A ground lease can be terminated by an offer to renew or revise the ground rent. The debate over the ground lease system in Amsterdam has led to criticism of its high fees. Many municipalities made significant policy changes regarding ground leases in the early 2000s. The demand for converting an existing ground lease into ownership varies from city to city (Ploeger & Bounjouh, 2017, pp. 81-82).

In Amsterdam, a political shift happened. This municipality was the first to introduce the ground lease policy for urban land back in 1896. In 2014, one of the major political parties that supported the ground lease system lost in the local elections. This paved the way for change (Ploeger & Bounjouh, 2017, p. 83).

The need for a ground lease was highlighted by the implementation of the 1824 Act Ground Lease in the Netherlands, and even today, it continues to be relevant. Intermediate tenures provide an alternative to buying or renting in some countries, offering proprietary rights that do not equate to full ownership. While Dutch rental law safeguards the tenants, a ground lease provides additional protection by offering a secure and transferable right that can be used as collateral, which is impossible with a rental agreement. A ground lease can also assist lessees or developers in securing financing, as they only need to finance building costs, not land acquisition costs, which reduces their initial capital requirements. This is particularly useful when financing is challenging, as happened after the 2008 financial crisis. Using a ground lease can help sustain the functioning of the real estate market (Ploeger & Bounjouh, 2017, p. 84).

Ideological reasons mainly drive this movement towards urban ground leasing, but it can also be viewed from the perspective of municipal policy. While the instrumental reasons for using ground leases may be less critical nowadays, they remain a powerful tool, particularly regarding redevelopment. In the long term, it is expected that redevelopment will occur in every municipal area (Ploeger & Bounjouh, 2017, p. 84).

Ground leasing is a valuable tool for financing development and redevelopment projects during times of economic downturn. Additionally, it provides the government with a means to capture the surplus value resulting from changes in land use, allowing them to obtain funds for investments in the area. Urban ground leasing

is essential for sound area management in multiple land uses (Ploeger & Bounjouh, 2017, p. 84).

Therefore, the Dutch urban ground lease is expected to continue as a valuable land policy tool as long as lessors and lessees understand its possibilities. According to data on urban land delivery in ground leases, substantial evidence supports the conclusion that such arrangements are a viable and effective means of facilitating urban development. This data suggests that ground leases provide developers with greater flexibility and reduce overall costs while enabling local authorities to retain control over the use and development of urban land. Additionally, the data shows that ground leases can be particularly beneficial for affordable housing projects, as they offer longer lease terms and lower upfront costs than traditional land purchase arrangements (Ploeger & Bounjouh, 2017, p. 84).

5 Data collection: Governance in Greenland

This chapter will utilise the ASID model to examine Greenland's development, planning regulation, and land administration. The ASID model highlights the country's Agency, Structure, Institutions, and Discourse.

5.1 Structural conditions

This section provides an overview of Greenland, offering insights into its socio-economic and distinctive population and geography.

Geography

Greenland is the world's largest island, with a total area of 2,166,086 km^2 on the North American continent. It is mountainous, and 81 per cent of its land is covered in ice (Greenland Statistics, 2022, p. 4).

Greenland is in the northern polar region, where the winters are cold, and the summers are mild, with some local variations. In North Greenland, the climate is considered High Arctic, with cool summers, the midnight sun, and harsh winters lasting from one to five months without the sun coming over the horizon. Central and South Greenland, on the other hand, generally have a low-arctic climate, except for the deep fjords of South Greenland, where the subarctic climate allows for sparse tree growth. Greenland is mostly an untouched tundra, with all towns and settlements on the coast. Most of the population lives on the southern part of the west coast (Greenland Statistics, 2022, p. 16).

The many fjords and inland ice in Greenland's 44,087-kilometre coastline make travel between most inhabited places only feasible by flight or sea (Nordic Co-operation, 2023).

Population

The population of Greenland is 56,699 at the start of 2024 (Greenland Statistics, 2024). The inhabited areas of Greenland are depicted in Figure 5.1 on the map. Of the total population, 63 per cent reside in urban centres of Greenland, which are the five municipal administration seats. Twenty-two per cent of the population lives in settlements that have a population between 700 and 3,000. Fifteen per cent of the population lives in settlements with less than 700 people, which comprise 60

settlements. Nuuk, the capital, has 19,872 inhabitants (Greenland Statistics, 2024).

The amount of migration in Greenland is significant compared to its population size, dramatically impacting the population's composition. For the last 50 years, people have been migrating from rural settlements to towns, mainly to Nuuk (Greenland Statistics, 2022, p. 8).

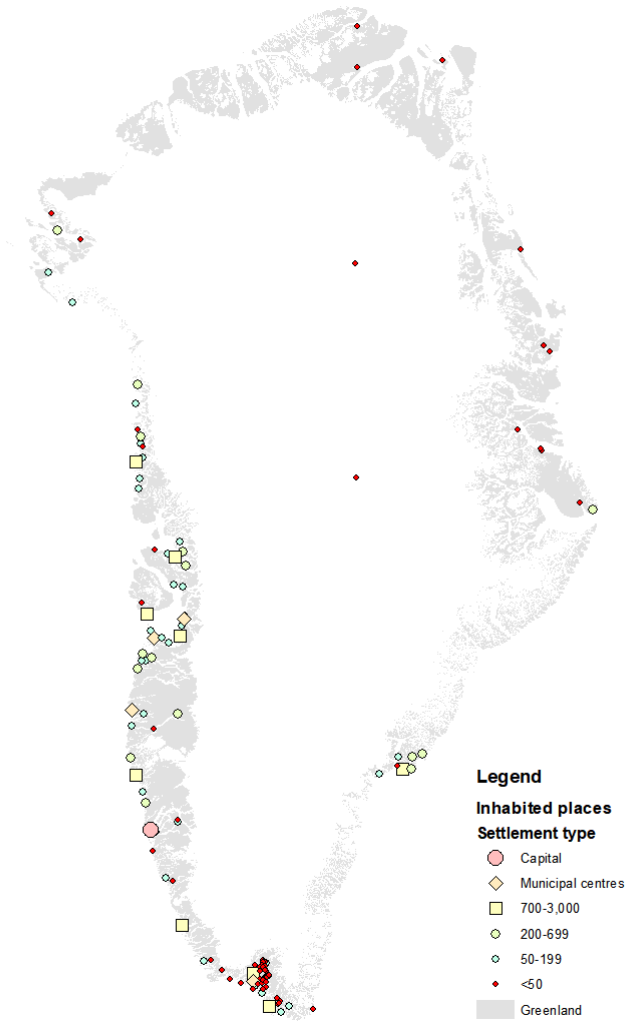

Figure 5.1: Inhabited places and their type in Greenland, source: Author.

The population growth in Greenland since 1789 can be seen in Figure 5.2. The graph illustrates the growth of the population in Greenland over 200 years. The population increased steadily until the 1950s and 1960s, when it rose by 20,000 within two decades. However, the population remained constant at approximately 55,000 in 1989 and 56,000 in the last 35 years. According to Greenlandic statistics, the population growth rate slowed in the 1970s after the implementation of family planning campaigns in 1967 (Greenland Statistics, 2020). It is important to note that several

factors, such as the Danish campaign for population growth, significantly influenced the population growth in Greenland. However, the improvements in housing and healthcare since the 1950s could also be attributed to the population increase. In response to this growth, the Danish government initiated family planning campaigns that included the provision of IUDs to around 50 per cent of women of childbearing age between 1966 and 1970 to control the population growth rate.

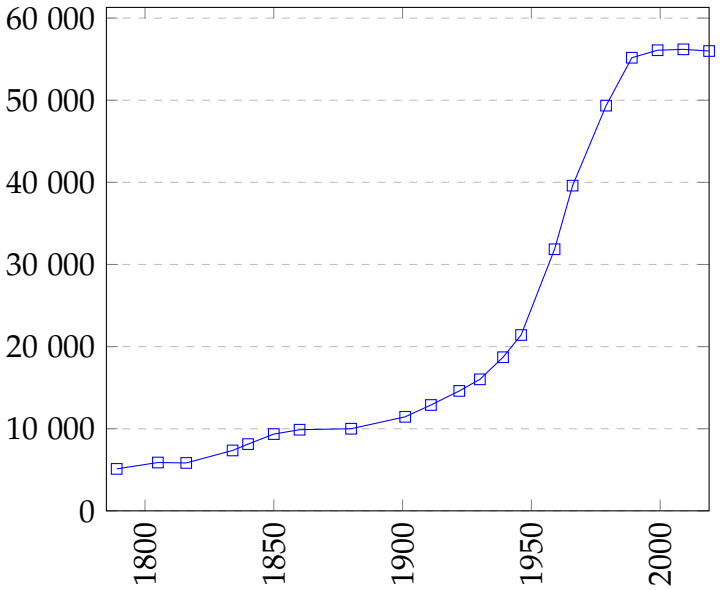

Figure 5.2: Population in Greenland, source: (Denmark Statistics, 1921, 1980; Greenland Statistics, 2023; Skjelbo, 1995)

Greenland's settlement history has witnessed a significant shift in population distribution from centralisation to decentralisation (Skjelbo, 1995, p.94). Permanent towns or settlements were established at the arrival of Hans Egede in 1721, as mentioned in Chapter 1. Before that, the population followed the animals they hunted, and only temporary summer and winter settlements could change in response to changing hunting opportunities. There was no concept of town building in the sense of constructing actual houses. Figure 5.3 shows that the inhabited places have gone downward since the start of 1900 from 207 to 1946 to 140 and suddenly jumped back up to 194 in 1958 and significantly decreased till the current 74 inhabited places that are counted by the Greenland statistics (Greenland Statistics, 2024).

It is worth noting that there is a gap in data due to changes in statistics administration between the Danish and Greenlandic agencies, which is difficult to measure accurately. Moreover, the population counting method differs between the two agencies. For example, if a sheep farm is located near a small settlement, the sheepherder

and their family will be counted by the Greenlandic statistics as inhabitants, which can inflate the population in the settlement. Unlike Danish Statistics, Greenland statistics do not include crewed weather stations and mines. There were 123 inhabited places in 2021, including mines, sheep farms, weather stations, seasonally crewed research sites, and Sirius encampments. Notably, the 37 sheep farmers in Greenland are included in the nearby settlement's population count (Naalakkersuisut, 2021).

During the urbanisation process, Greenland underwent a fast-paced environmental transition. In contrast, European countries had more than 500 years to become more urbanised and tackle sanitation, industrial pollution, and green environmental issues sequentially and with more time (Sorensen, 2023, p. 940). However, given the rapid development of settlements in Greenland, allocating land use to different types was necessary in a short period. An industrial zone initially located on the edge of the inhabited zone was eventually closed off by housing developments, and the issues of pollution and hazardous waste were not addressed.

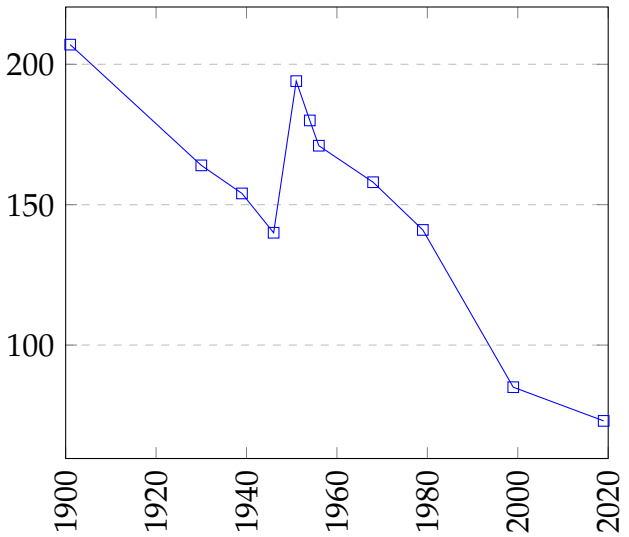

Figure 5.3: Development of settlements in Greenland, source: (Denmark Statistics, 1954, 1956, 1958, 1970, 1980; Greenland Statistics, 2023; Skjelbo, 1995)

Over the years, there has been a noticeable change in the population distribution across the four current municipal administration centres, the former municipal administration centres with more than 200 inhabitants and the smallest settlements with less than 200 inhabitants. The most prominent feature of this change has been a continuous decrease in the population of the smallest settlements. At the same time, the four municipal centres have seen a steady rise in population. The projections suggest that this trend of urbanisation will continue. Figure 5.4 shows a visual representation

of the population distribution in settlements.

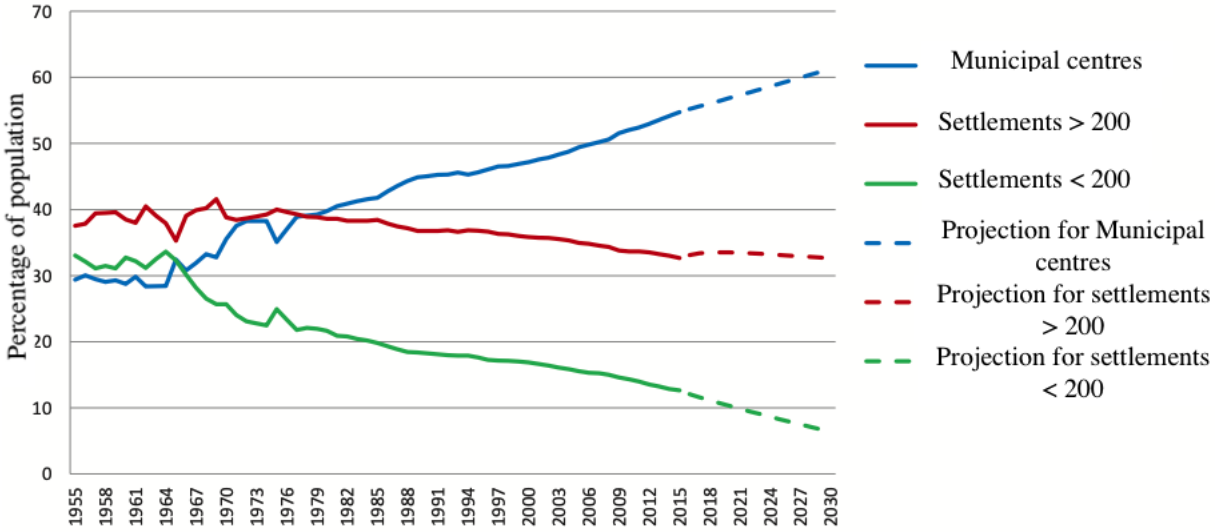

Figure 5.4: Population change in settlement types, source: (Naalakkersuisut, 2015).

Settlement pattern

Greenlandic settlements should be considered isolated settlements without links to nearby communities. Due to their isolated locations, each settlement must have particular societal functions to ensure a stable and livable place. Daily travel between communities is impossible, making comparing Greenland with countries with regional commutes challenging. Additionally, a distinct economic structure applies to these isolated communities. "Micro-state economies" describe settlements in Greenland with island operations (Hemmersam, 2021, p. 152). An island community depends on natural resources to maintain the livelihood of the settlement. Natural resources such as hunting, fishing, tourism and raw material extraction provide income for the community. All settlements have income from other sources - primarily from the national treasury and the municipality, such as the employment of teachers, sanitation work or the operation of the electricity supply. In this context, it is essential to consider that the capital's economy relies on the income of other settlements from natural resources (Karlsen, 2020, p.5).

It is expensive to have isolated settlements where there have to be individual utilities in each inhabited place, and the supply of goods is expensive. In the northernmost town, Qaanaaq, the shipping freight only occurs twice a year due to sea ice that closes the region from October to July. The town must have a freezing capacity for nine months of fish caught during the winter. Having a specialised workforce in some smaller settlements is too expensive, so some in the utility company have

general knowledge of how to make daily repairs. However, more significant repairs would require specialists to be flown in. The government can afford to deliver utilities, freight, and telecommunications through a one-price system. Though some settlements with hydropower plants and more extensive water resources are cheaper for the utility company, they would be too expensive for the rural citizens if there were no one-price system.

Ownership of Land

Greenlandic customary property is based on general territorial rights, where the land is collectively owned, and its use is subject to territorial rights. The customary property is not just a Greenlandic phenomenon but part of a common Inuit legal culture, where the right to participate in resource use is based on being a local community member. Individuals or groups can obtain preferential rights to use a specific part of the territory based on regular use, investment of materials in any permanent arrangement, and social recognition of the right of use. If the use ceases, the right reverts to the collective and is once again included in the general territorial rights of the local community. There are two types of rights: general territorial rights, collectively utilized by a settlement, and individual preferential rights, which could be inherited or granted to outsiders by the inhabitants (Jeppson, 2014, p. 8).

In Greenlandic culture, there are three types of private property rights - the right to acquire, the right to utilise, and the right to transfer. To acquire property ownership, the original owner must decide to transfer their ownership rights alone or through an agreement. Gifts, sales, and inheritances are the only accepted forms of property acquisition. Any other form of acquisition is considered unauthorised. Anyone claiming property ownership against the owner's will is considered guilty of theft or robbery. However, if the original owner abandons their claim, someone else can eventually acquire the property. In such cases, the property becomes ownerless and can be acquired as such. The head of the household has the right of utilisation or disposition, which includes practical matters such as house repairs, permission for strangers to stay in the house, and the use of catch. The right of transfer can be exercised through gifts or inheritance (Jeppson, 2014, p. 10).

In the 1950s, private land ownership gained significance in Greenland when Danish private companies were permitted to enter and settle there. The Danish state's modernisation of Greenland increased construction activities. Although the Green-

land Commission of 1950 did not delve deeply into the matter, it did acknowledge that individuals in Greenland did not possess land ownership rights; instead, they had the right to use the land (Skjelbo, 1995, p. 208).

The committee formed in 1960 to discuss the future of Greenland was well aware of the consequences if the land in Greenland was privatised. They foresaw that the expansion of towns would lead to a shortage of land for building. Thus, they posed the problem in the following manner: Land, which was once abundant and held no value, was now becoming more valuable in certain areas. The houses' prices exceeded the cost of construction and materials and could be seen to have included the cost of the land or the house's location (Skjelbo, 1995, p. 209).

A majority of the committee members (excluding those from the Conservative Party and Venstre) agreed that the Greenlandic community's public sector owned the land in Greenland. The person allocated the land had a broad right to use it, which was irrevocable. This right of use provided access to any form of actual use of the land and could be transferred through inheritance or sale of a house or business (Skjelbo, 1995, p. 209).

The committee acknowledged that in some cases, the right to use land may be limited to a certain period, such as 50 years. However, the majority agreed with the recommendation put forward by the Greenlandic group that it would be in the best interest of the population to maintain the previous property rights system, Figure 5.5 shows how the Greenlandic collective land ownership practice came to be. This system allows the people to have the same sense of attachment to the land as they would if they were land owners. During negotiations, the idea was expressed that the community's ownership of the land does not put any individual at a disadvantage (Skjelbo, 1995, p. 209).

The majority also highlighted the potential negative consequences if there was private land ownership and Denmark joins the Common Market in the EU. Then, all citizens within the EU could acquire land in Greenland. Therefore, the committee saw it essential to maintain the current property rights system to protect the interests of the Greenlandic population and other Danish citizens (Skjelbo, 1995, p. 209).

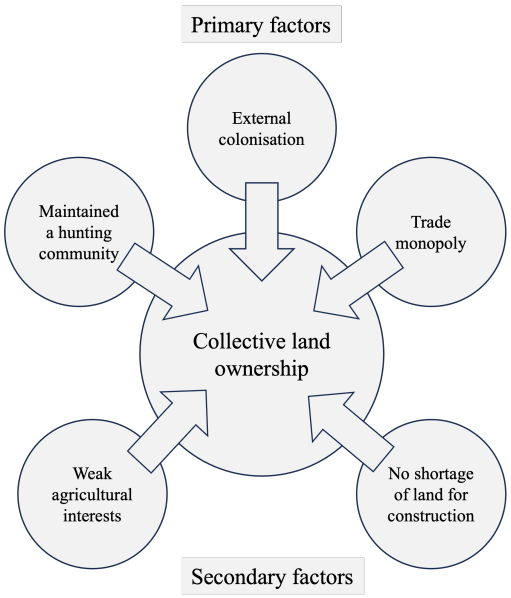

Figure 5.5: Background of collective land ownership prior to 1950, source: Skjelbo, 1995, p. 208.

Politics

Greenland is a self-governing territory within the Danish Realm and is politically considered a part of Europe. It was made a Danish colony in 1721, a Danish county in 1953, and granted Home Rule in 1979. Self-Government was established on June 21, 2009. Along with Denmark, Greenland became a member of the EU in 1973. However, in 1982, Greenland held a referendum and decided to withdraw from the EU in 1985, and has not been a member since (Greenland Statistics, 2022, p. 4).

The government of Greenland is known as Naalakkersuisut and is located in Nuuk. The parliament of Greenland is known as Inatsisartut and has 31 members. In 2009, a municipal reform in Greenland reduced the number of municipalities from 18 to 4. However, the number increased to 5 in 2017. The current municipalities are Kommune Kujalleq, Kommuneqarfik Sermersooq, Qeqqata Kommunia, Kommune Qeqertalik, and Avannaata Kommunia. Two representatives from Greenland are elected to the Danish Parliament during parliamentary elections (Greenland Statistics, 2022, p. 13).

There is an ongoing debate in Greenland regarding the effectiveness of municipal reform in 2009. The southern municipality, Kujalleq, has recently proposed a referendum to reinstate the old Nanortalik Municipality. Many politicians are dissatisfied with the current municipal reform as it has led to a lack of local presence and growth only occurring in municipal centres. The previous municipal reform was initiated to ensure that the municipalities were of a specific size to handle the

workload for the relocation of administration from the government to the municipalities. Consequently, the National Planning administration's open land governance was transferred to the municipalities, making them the sole land use authority for their respective areas. The previous system of 18 municipalities was deemed too bureaucratic and expensive, with high wages for 18 municipal administrations. Centralizing these administrations into four larger ones had its benefits. Kujalleq, the smallest of the municipalities, has experienced a declining population for an extended period.

Greenland has four district courts and the Greenland Court of Justice. The Supreme Court of Denmark is also a court of law in Greenland. The correctional facilities in Greenland focus on resocialisation, and six facilities are located in various towns. (Greenland Statistics, 2022, p. 15).

Economy

Greenland's economic landscape is characterised by unique dynamics, reflecting its remote location and Arctic climate. Most employment opportunities stem from the public sector, while in the settlements, a notable portion of the population engages in self-employment, predominantly as fishermen and hunters. This blend of public and independent endeavours shapes the labour market, which adheres to a model reminiscent of Scandinavian standards, complete with negotiated wage agreements, arbitration procedures, holidays, and provisions for work-related injuries. However, the employment landscape experiences significant fluctuations throughout the year due to the seasonal constraints imposed by Greenland's climatic and geographical conditions (Greenland Statistics, 2022, p. 19).

In Greenland, a few large industries dominate the economic activity. Roughly one-third of the companies' turnover is generated within fisheries and fisheries-related industries and trade, while wholesale and retail trade accounts for almost one-third of the total turnover. Fisheries are the primary industry in terms of value-added, accounting for over one-third of the total value added. The business community in Greenland is dominated by large publicly owned companies, including Royal Greenland A/S (fishing industry), KNI A/S (retail and oil sales), Royal Arctic Line A/S (shipping), Air Greenland (air traffic), and Tusass (telecommunications), which are all 100 per cent owned by the Government of Greenland (Greenland Statistics, 2022, p. 20).

The fishing industry is the most significant sector in Greenland, and the Govern-

ment regulates it through quotas and licenses, which mainly target specific species like shrimp, Greenland halibut, and cod. Pelagic and coastal fishing are the two categories, with the former carried out by factory trawlers and the latter providing shopping supplies through land-based operations. The industry is dominated by two companies - Royal Greenland, a state-owned and the biggest in Greenland, and Polar Seafood, a private company (Greenland Statistics, 2022, p. 22).

The income level of people living in settlements is lower than in towns, but it varies depending on the municipality. The difference between settlements and towns is most significant in Kommuneqarfik Sermersooq, where Nuuk residents' average income is more than double that of those living in settlements. In 2020, women's average gross income was DKK 231,000, while men's was DKK 292,000. Nationally, men's income was 26 per cent higher than women's. This difference can be attributed to men being overrepresented in economically active groups while women are overrepresented in the oldest age groups. Income inequality is more significant in Greenland than in other Nordic countries. Greenland's residents pay a personal income tax rate of 42-44 per cent, depending on the municipality (Greenland Statistics, 2022, p. 22).

5.2 Development of Greenland

Physical planning in Greenland was carried out without any legislative basis before the late 1970s, but plans were still implemented despite the absence of planning legislation. The successful implementation of these plans can be attributed to the specific planning conditions unique to Greenland. These conditions include a collective right to land and the fact that nearly all investments in building and construction, especially in the housing sector, were publicly funded. While there is no private property right to land, anyone can obtain the right to use the land if their intended use follows physical planning regulations (Adolphsen & Greiffenberg, 1998, p. 90).

In order to gain a better understanding of the development and planning in Greenland, it is essential to examine the significant historical periods that have contributed to its formation. People have lived in Greenland for over 4,500 years, and several waves of Inuit migration from North America have occurred (National Museum of Denmark, n.d.-a). The Norse Greenlanders arrived around 1000 from Iceland and Norway but disappeared around 1450 (National Museum of Denmark, 2012). The Thule culture migrated to Greenland around 1200 and coexisted with the Inuit be-

tween Greenland and Canada. The last wave of migration to Greenland took place in the 18th century, and the current population of Greenlanders are the descendants of the Thule culture (National Museum of Denmark, n.d.-b). When the Norse Greenlanders settled in Greenland, they established a connection to the Danish Kingdom, which led to the introduction of Christian missionaries and, eventually, the colonisation of Greenland. At the start of the 17th century, the discourse was that the Danish believed that the Norse people inhabiting Greenland still followed the Catholic faith and needed to be converted to Lutheranism (Shannon, 2016). However, instead of the Norse, the Greenlanders were discovered, trading took place between them and European sailors. The Danes considered the Greenlanders their people and declared that trade with them should only occur through the Danish-Norwegian trade. The Danes felt a duty to help the Greenlanders live in a civilised manner like theirs.

Greenland was colonised by Danish and Norwegian traders and missionaries between 1721-1900 (Skjelbo, 1995, pp.96-100). Between 1900 and 1945, the colonial administration did not prioritise discussions or initiatives regarding population problems in West Greenland. The settlement regulations of 1913 and 1917 granted the newly established municipal councils the authority to stop the construction of new settlements. The colonial power argued that Greenland needed to remain isolated and self-sufficient, both commercially and economically. Fishing became more critical for Danish business development in Greenland in the 1930s (Skjelbo, 1995, pp.101-104). In 1950, the Greenland Commission recommended that Denmark invest in specific areas to improve living conditions (Adolphsen & Greiffenberg, 1998, p. 12).

Since Greenland gained Home Rule in 1979, all political parties agreed to end the concentration policy that had previously neglected smaller settlements. However, things have stayed the same since Greenlanders took responsibility for the development. Adolphsen and Greiffenberg argue in an article that Greenlandic politicians were unhappy with the failed planning for self-reliant development in Greenland. They used this as a strong argument for a Greenlandic home rule. However, Adolphsen and Greiffenberg argue that things have stayed the same since Greenlanders took responsibility for the development. They have concealed that Greenland has one overwhelming problem: a sustainable source of livelihood. This problem was evident when a viable source of livelihood was not in place when the home rule began. The cause can be the shift from a natural economy to a money economy established in the 1950s. The natural economy relied on hunting seals to provide people with

food, clothing, and heating. The Danish planners and politicians considered this unsustainable because the seals were not caught in sufficient numbers. They saw no alternative but to remodel Greenlandic society to adapt to modern social conditions with specialised, highly developed technical facilities, division of labour, and a money economy (Adolphsen & Greiffenberg, 1998, pp. 8-18). The planners and politicians focused on providing the conditions for private (Danish) capital investing in Greenland, but private capital did not invest in Greenland (Adolphsen & Greiffenberg, 1998, p. 11).

Greenlandic politicians heavily criticised a National Plan Report from 2016 (Naalakkersuisut, 2016). It was redrawn from the public hearing due to its recommendations that Greenland should more purposefully, explicitly and in a coordinated manner follow the development principle known as "local centralisation" rather than the "icing model" to identify which settlements should be prioritised and which should not. Additionally, that there should be implemented measures to provide orderly planning for the closure of settlements that must be are no longer prioritised.

Despite the uncertain future of Greenland's economy and settlements, the increasing skills of the well-educated population will likely strongly impact urban culture and the towns' economy. However, the future of these towns will continue to be shaped by Greenland's landscape features, including its rugged topography, scarce buildable land, scattered population, and challenging weather and climate. As a result, shipping and inter-city transport will remain expensive, and urban regionalisation will continue to be limited for the foreseeable future (Hemmersam, 2021, p.153).

5.3 Land Administration in Greenland

This section will discuss the development in Greenland, planning regulations, and land administration.

Planning regulation in Greenland

Greenland has a long history of laws and regulations governing land use and settlement. An overview of the regulations can be seen in Appendix A. The Instruction of 1782 was the basis of the government and legal system for almost a century (Skjelbo, 1995, p.19). In 1913, a settlement regulation was introduced. The Executive Order from 1953 established settlement committees in each municipality to process land use

permits, authorize land use rights and consider urban planning considerations. The Greenland Technical Organisation (GTO) has played a critical role in the country's planning and land management. The 1977 and 1981 Acts reflect the GTO's belief that they have the final say in everything due to the ownership form of land in Greenland. GTO faced a dilemma between two options. One was establishing a system similar to Denmark's that would safeguard citizens' legal rights, including access to planning. The other was to stick to their traditional thinking and continue with the culture and system they had created based on their role as a planner and land manager (Skjelbo, 1995, p.169).

The Greenlandic Planning Act is an assembly act that regulates land use permits and rights. An executive order in 1992 established more precise rules for land administration in municipalities to regulate the growing need for land administration (Skjelbo, 1995, p.19).

The Greenlandic Planning Act can be seen as a patchwork of provisions from the Danish Planning Act. In 2008, the Planning Act collected executive orders for land use to be part of the act.

The current Planning Act was adopted in 2010, after the municipal reform, the competence of planning and land administration was given to the municipality to cover the whole of Greenland, which only planned and administrated urban areas in the municipalities. This decentralisation sought to make it easier for the Greenlandic people to build, and this was done by eliminating the final adoption layer in the parliament and removing the local plan level so that the municipal plan could make land use provisions. The Greenland Planning Act also implemented plan strategy provisions in Denmark. A caveat is that the decentralisation thoughts and decisions did not evaluate the planning act as a whole since the provisions regarding the objection from the government remained when similar provisions in the Danish Planning Act were changed.

Section 1, subsection 1, no. 2 of the Planning Act requires that there should be an appropriate balance between open land and man-made facilities. The preparatory works of the Act state that a large part of Greenlandic society is currently being urbanised, and there is an increased focus on exploiting non-living resources. However, this development should not come at the cost of damaging the natural environment, including animal and plant life, landscape, and cultural values. Therefore, it is crucial to maintain the right balance between areas designated for urban or rural settlements

and other man-made structures and the rest of the country's territory. This balance will ensure that traditional business activities, recreational activities, scientific research, and nature conservation can continue without compromise (Naalakkersuisut, 2010, p. 20).

The changes that were implemented in 2015 had a significant impact on the Planning Act. A new element, project applications, was introduced, allowing citizens and companies to apply for large building projects that the municipality had yet to plan for. The municipality would reserve the land use for the applicant while the plans were being made. This provision is an alternative to the traditional land use allotment procedures, where anyone can apply for the plot to build on. However, the provision of project applications gave developers better opportunities to build large projects. Additionally, the municipalities can extend the construction time from the usual two years to build from the land use permit date annually for larger projects.

In 2023, some changes were made to the land management regulations, and the local plans that were previously removed were reintroduced. The local plan level was reintroduced because of the confusion caused by its absence. It was unclear when the municipal plan was overwritten, when the land use provisions were adopted, and that the municipalities used the municipal plan addendums as local plans.

5.3.1 Challenges in Land Administration in Greenland

The preparatory works of the addendum to the Planning Act from 2023 include "perspective planning" to set aside areas for specific purposes in the future. The "perspective planning" implementation is necessary because it has become difficult for both authorities and citizens to distinguish between perspective planning in the municipal plan and planning financed and coordinated with other authorities. Introducing an element of perspective plans will make it more transparent for citizens and investors to determine whether the implemented planning is realistic, financed, and expected to be realised shortly or if the planning is simply an expression of a reservation of areas for a given purpose in the future (Naalakkersuisut, 2023a, p. 4).

The land use regulation in the Planning Act in Greenland can be defined as weak since it only requires a new municipal plan to change the zone, for example, if the area is dedicated as a "construction-free zone" and the municipality receives an application from a business owner that wishes to build in that particular area that is currently identified as a construction-free zone and the municipality wishes to accommodate

the business owner then the municipality can make another plan. The reason for this weak safeguarding around plans is that there is no strict collaboration between the Planning Act and the Environmental Protection Act, and the Environmental Protection Act in Greenland is more focused on nature outside of the inhabited places rather than on the different land use zones.

One example of the need for coordination between planning and environmental legislation is that the Planning Act enables municipalities to establish local plans that limit the environmental impact of noise, dust, odour, and other factors that might disturb the surroundings. These plans may also include restrictions on land use and buildings to protect neighbouring areas. However, the environmental legislation does not specify when noise pollution is unacceptable or what maximum noise levels are allowed in different land use zones. Although the Environmental Protection Act permits municipalities to create municipal regulations that the government can modify if it disagrees, the municipality must refer to the Danish Environmental Agency's noise pollution guidelines because the Ministry of the Environment has a provision (section 12) in the Environmental Protection Act that gives them the authority to prepare guidelines within the scope of the law, including quality requirements for air, water, soil, noise, waste, odour since 2011, the ministry has not written the guidelines. This starkly contrasts with other countries, such as Denmark, where fundamental health concerns are safeguarded.

In Greenland, citizens do not have associations written into the planning law. Therefore, they have to write hearing answers individually. This is unlike Denmark, where associations are included in the planning law. Citizens opposed to changes to construction-free areas or green spaces often found between buildings risk being ignored by the municipality's desire to promote business development. There is a resistance to outside involvement or regulation that could make development cumbersome to business interests, and this consideration overlooks the health or livability of the settlements.

In my bachelor's thesis, I discovered that three main settlements in Greenland had set high population growth targets. However, the municipalities have not explained where the additional citizens will come from. The three largest settlements in Greenland have set ambitious targets for population growth towards 2030. Nuuk aims to increase its population by 12,000 citizens, while Sisimiut targets an increase of 5,000 citizens. Ilulissat has set the most ambitious target. This ambitious plan will

effectively triple the number of citizens in Ilulissat. However, there is no clear indication of where those additional citizens will live. Suppose this growth is the result of urbanisation. In that case, people will likely move from other settlements in the country, meaning that almost the entire Greenlandic population will live in just three settlements (Karlsen, 2020, p.9). The practice of extensive planning can be due to the Greenland Commission's efforts to centralise the population in larger settlements, which may not be the best approach for planning. The municipalities' objectives do not align with population projections from Statistics Greenland and the politicians' wish to support the spread of settlement in Greenland.

Figure 5.6 displays the municipal plan of the capital that aimed to construct ambitious suburbs towards the south of Nuuk, involving tunnels and multiple bridges. However, the new Planning Act 2024 now explicitly instructs municipalities to plan for only four years. Moreover, it states that the ambitious plans should be put on hold and called "perspective plans". Instead, municipalities should plan based on the actual demographic development of the area.

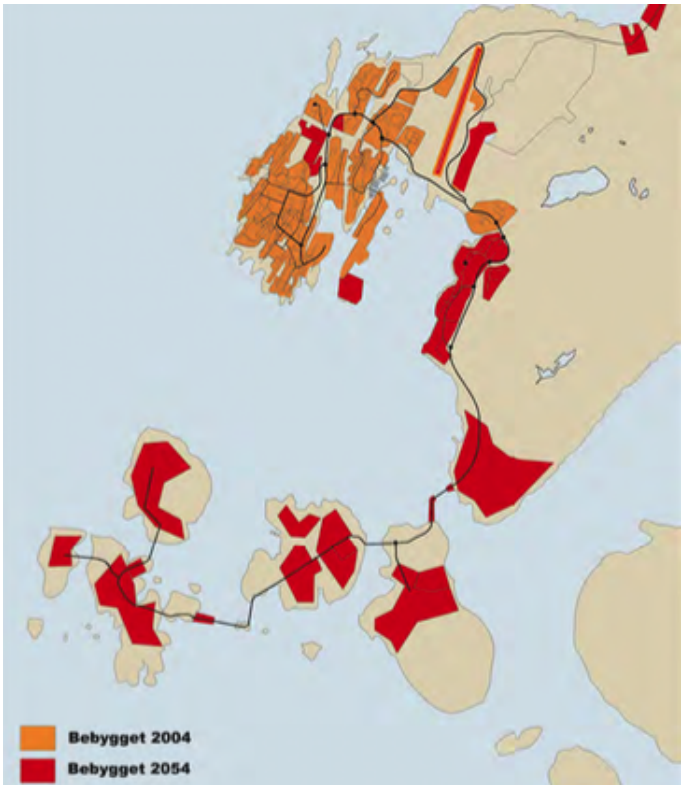

Figure 5.6: Built areas in 2004 in orange and planned areas in 2054 in red, source: Municipality of Nuuk, 2006, p. 20.

Building plots

The current configuration in a local plan highlights the need for a new approach to placing building plots. The current model is rigid and leads to conflicts between neighbours. Figure 5.7 shows an area in Nuuk where buildable plots are shown on a map. Building is only possible inside the buildable plots.

There is a need for a new approach because it is only when construction begins that the neighbours appeal for the area allotted for the construction. Citizens need to read the local plan proposals for their areas proactively. However, there is no custom to alert the affected rightsholders to changes in the local plan for their area. There are only a few comments on the proposals. The appeals are typically about the loss of view and construction noise. The challenge is that the appeal must be made eight weeks after the land use permit is given after section 56 of the Planning Act. The land use permit is often given over a year ago, so the neighbour with the appeal against the municipality's case handling is not qualified to have the case tried. The land use permits are publically available for everyone, so the neighbour has had the opportunity to appeal for the land use permit back when the permit was given for the construction that started a year later. There are two instances where the citizens can voice their concerns: once when the proposal of the local plan is made public and the second when the land use permit is made public. The only time there is a hearing in the neighbourhood for a minimum of two weeks is when the municipality is about to give a dispensation to deviation from the local plan for individual land use changes.

Figure 5.7: Building plots showing footprints of planned buildings, source: Sermersooq Municipality, 2017, p. 20.

A middle ground could be where the municipality defines a maximum buildable percentage for a plot and lays out a boundary for the plot on which one can build a house. The boundary of a building plot (byggefelt) could be, for example, 400 m^2 for a single-family home, and the applicant for the building plot will be able to place and orient the house to their wishes. The applicant will live up to the distance requirements by the municipality and the building code to neighbouring houses. However, here, the difference is that the applicant can, if he or she wishes and is willing to pay the construction costs to place the house farthest from the road and sanitation. This middle ground approach resembles the Danish 'situationsplan' with construction lines, see Figure 5.8. It can be seen to be more a Greenlandic way instead of building in neat building lines that the urban planners have drawn in CAD or GIS, as it is expected that applicants have to apply to move house a few meters since the building plot given them would be too expensive to follow due to the hilly terrain present in Greenland.

It is critical to make clear that within this buildable plot, the rights holder must apply to use more than what has been built. There could be a concern that citizens

begin to see the buildable plot as their plot as a cadastral unit similar to a Danish plot. However, the provisions of the Planning Act will remain the same, and if anyone wants to have exclusionary rights to a plot of land, then one has to apply for the use of that plot. The same can be seen when rights holders have built a hedge around their house. Then, they get a sense of ownership of what is within the hedge as if it were a freehold. A temporary land use permit may not be required for land use lasting up to two months, although this is determined case-by-case (Naalakkersuisut, 2010, p. 50).

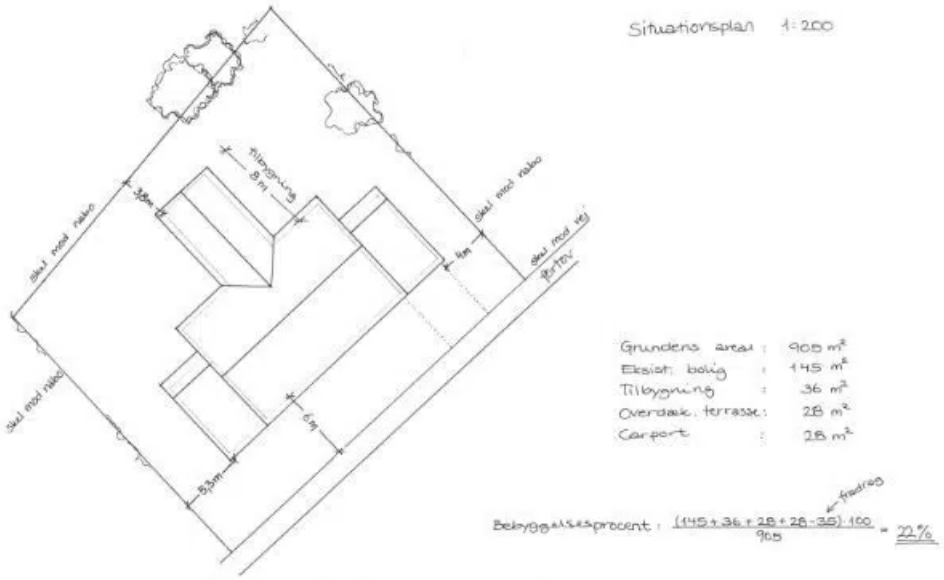

Figure 5.8: Site plan example in Brønderslev Municipality Denmark, source: Brønderslev Municipality, n.d.

A Danish approach to placing houses in plots is using site plans (situationsplan), where the main exterior outline of the building is drawn, distances to the boundaries of a neighbouring plot and road are shown on a map, and distances to other buildings within 10 metres of the main building are shown. The built percentage is calculated, and terrain coordinates are shown on the map or with contour lines (Brønderslev Municipality, n.d.).

Buildings no longer in use

As previously stated, building owners often abandon their properties, letting them deteriorate without any obligation to restore the land to its original state as required by the standard land use permit agreement. They also fail to return the land use permit and building to the municipality. The following case highlights a common land use issue with many unused buildings in Greenland.

Four buildings containing 76 apartments were constructed in the late 1950s and early 1960s and are owned by INI A/S - a public housing company owned by the Government of Greenland in Nuuk. However, these buildings are no longer in use and were vacated. The Ministry of Housing and Infrastructure planned demolishing and rebuilding them in 2013. Unfortunately, despite this plan, the government cancelled the public tender for demolishing and constructing new student housing in the summer of 2023 due to unsatisfactory contractor bids. As a result, the construction plans were postponed for two to three years. In February 2024, Figure 5.9 shows the four buildings with boarded-up windows still standing during a trip to Nuuk.

Figure 5.9: Buildings no longer in use by the main road in Nuuk in 2024, source: Author.

This case shows that the municipality is not actively engaging building owners to keep their buildings in use and that speculation is easy in Greenland. Even the government of Greenland can keep the land even without having actual use for it and keep it away from circulation, where private interest may have to build new housing back in 2013. However, as the stakeholders are passive in active land use, a building plot in the city centre is not available. The effect is that citizens or businesses are forced to build on new land outside the inhabited places with no infrastructure. They must bear the infrastructure investment costs for roads, electricity, and sanitation.

A possible solution to prevent speculation in larger settlements could be to impose a property tax or lease fee on the land use permit area. In some cases, people have purchased buildings but left them to decay as they can only afford to rebuild

them once they can afford to construct multistorey housing. However, the majority of politicians in Greenland, who are mainly socialists, have been hesitant to increase taxes or fees. This reluctance to introduce property taxes is not only due to the opposition against a property tax but also because the Greenlandic land use register "Arealregister" is not yet complete, and the ownership of land use permits is not always indicated in the register. The government's open data program aims to register land use permit owners, identifying the land use register as the fundamental register of property registration in Greenland. A land use register that indicates the actual owner of a land use permit would enable the government to enforce property taxes.

5.3.2 Environmental protection

The Environmental Protection Act[9] authorises preparing preservation orders to establish protected areas in Greenland. To date, 12 national preservation orders have been implemented. Additionally, 12 wetlands of international importance (Ramsar sites) have also been designated under the Nature Protection Act to safeguard critical wetlands for waterfowl, with some overlap with the 12 national conservation areas (Topp-Jørgensen et al., 2022). However, legislation has yet to be put in place to protect them, leaving them vulnerable to hunting, trapping, and travelling (Greenland Institute of Natural Resources, 2000, p. 51). A report from the Greenland Institute of Natural Resources from 2000 recommends updating nature conservation laws to protect huntable species and sensitive habitats and fulfil international objectives. It also suggests setting aside protected areas in low and subarctic zones to prevent fragmentation caused by agriculture. Cabin building and fast boats contribute to increased hunting pressure and disturbance levels, so a ban on construction in sensitive habitats is recommended. Several sensitive habitats in Greenland are threatened by agriculture, fishing, hunting, tourism, and mineral extraction, but only bird cliffs and eider nesting colonies are protected by legislation (Greenland Institute of Natural Resources, 2000, pp. 51-52).

The National Park in Northeast Greenland was granted protection by the Danish Parliament in 1974 upon the recommendation of the Greenlandic National Council. The National Park covers around 43 per cent of Greenland's total area. This makes it the largest protected area in the world. Since 1977, the National Park has been recognised as a Biosphere Reserve under the UNESCO MAB programme. It serves the dual

[9] Inatsisartut Act no. 9 of 22/11/2011 - Protection of the environment

purpose of preserving the area while providing research, monitoring, education, and resource utilisation opportunities (Greenland Institute of Natural Resources, 2000, p. 16).

The preservation and protection of natural resources in Greenland are of utmost importance, given that the country's economy is highly dependent on them. As a result, any conservation efforts must consider the unique economic situation in Greenland, which almost entirely relies on using natural resources. This makes nature conservation in Greenland a multifaceted issue that requires careful consideration and planning.

5.3.3 Land Administration and Environmental Protection Legislation challenges

The Greenlandic people have a unique attitude towards nature and resources that is a product of their nomadic lifestyle. Traditionally, they would use up the resources of one location and then move to another. However, modern Greenland has become a place-bound society where people no longer move around. Despite this change, the Greenlandic people have maintained their traditional practices regarding nature and resources. Greenland lacks environmental protection legislation to regulate land use and planning, unlike Denmark's Planning Act, which is closely tied to environmental protection legislation. Danish legislation has rules for areas transitioning from industrial to residential use when the municipality has decided to change the land use for the area after section 15a(2) in the Danish Planning Act[10]. This provision in the Danish Planning Act is harmonised with the environmental authorisation of particularly polluting companies, for example, section 34(6) in the Danish Executive Order of the Environmental Protection Act[11]. Environmental agencies cannot approve applications by particularly polluting companies to be in such areas. The effect is that the Danish municipalities must ensure that the noise pollution in the urban transformation area from particularly polluting companies stops after eight years once the municipality has adopted a local plan after section 15a(2) in the Danish Planning Act. The Greenlandic Executive Order on particularly polluting companies is from 2004[12].

[10]LBK no. 1157 of 01/07/2020 - Danish Planning Act

[11]LBK no. 48 of 12/01/2024 - Danish Executive Order of Environmental Protection Act

[12]Home Rule Executive Order No. 11 of 20/08/2004 - Environmental authorisation of particularly polluting companies

While it mentions that the authorisation of companies should consider the plan for the area, the authorisation has no time limit, so the companies can stay as long as they do not make changes to the buildings that require a new land use permit. The difference between Danish and Greenlandic environmental legislation is that Danish environmental legislation incentivises companies to use the best available technology to reduce emissions significantly after section 25 in the Executive Order on authorisation of listed companies [13].

An example is Nuuk, where the municipality transformed a large industrial area near downtown Nuuk into a more urban centre. After adopting the plans, new multistorey housing, hotels, and hostels were built. However, due to the need for coordination between the environmental and planning legislation, the area still has heavy traffic from trucks, transport companies, car dealerships, and contractors. The area is an unsafe urban environment where heavy machinery coexists alongside backyards where children play. The Sermersooq Municipality, where Nuuk is located, has struggled to find new industry areas. As a result, the companies have only one option but to remain where they are.

Another point regarding cooperation between planning and environmental legislation is that Greenland has yet to introduce a strategic environmental assessment of plans (SEA), even though the Planning Act has authorised the creation of an executive order in section 4(2). It has been 14 years. This presents an opportunity to have a nuanced discussion about balancing urban development and preserving nature. It may involve compacting the urban space and making more thoughtful decisions about harmonising the built-up zone with nature. This approach would ensure that nature can remain in its natural state and not just be seen as an unbuilt land to build on. This would also align with what ancient Inuit believed - that there are spirits that equal a human soul in the land and the mountains. Therefore, the government could consider how the Danish executive order on the strategic environmental assessment of plans is and try to balance it with indigenous beliefs in the executive order for strategic environmental assessment of plans and environmental protection legislation in general.

[13] Danish Executive Order no. 1083 of 9/8/2023 on authorisation of listed companies

5.3.4 Interim conclusion

Upon examining various aspects of legislation in planning, land administration, environmental protection, leasehold management, and the future of land administration in Greenland, several critical insights emerge through the ASID model.

Agency The historical narrative reveals the agency exerted by various actors, from colonial powers to modern Greenlandic politicians, in shaping the development trajectory. Despite shifts in governance, the agency remains a crucial force driving policy decisions and developmental pathways. Examining environmental protection, land management, and leasehold management shows how stakeholders at different levels assert their influence through legislative action, policy implementation, or community activism. This agency is dynamic and adaptive, responding to changing socio-economic contexts and environmental imperatives.

Structure Structural factors, such as geographical constraints and historical legacies, profoundly influence Greenland's development. These structures often set parameters within which the agency operates, shaping the possibilities and limitations of policy interventions. The vast expanse of Greenland's territory, its harsh climate, and its history of colonial exploitation all contribute to the structural context within which development unfolds. Understanding these structural dynamics is essential for crafting effective strategies aligning with the Greenlandic landscape's unique characteristics and society.

Institutions The evolution of institutions, from colonial administrations to contemporary planning bodies, reflects attempts to navigate complex socio-political landscapes. Institutional frameworks determine the rules of engagement, delineating responsibilities and power dynamics within the realm of development and land management. The analysis shows that Greenland has transitioned from centralised governance structures imposed by colonial authorities to more decentralised models that seek to empower local communities and indigenous voices. However, challenges persist in ensuring that institutional arrangements are inclusive, transparent, and responsive to the needs of all stakeholders.

Discourse Discourses surrounding development in Greenland have evolved, reflecting changing societal values and priorities. From early colonial narratives of 'civilising missions' to contemporary debates on sustainable livelihoods, discourse shapes perceptions, policies, and developmental outcomes. Amplifying marginalised voices and challenging dominant discourses could lead to more equitable decision-making.

6 Data collection: Leasehold management in Greenland

This chapter explores the legislation regarding leasehold land in Greenland, the creation of land value and discourse around the taxation of the right of use.

Area allotments in Greenland where there is collective ownership of land can be understood as exclusive rights of use or leases from the collective. Another way to define collective land ownership is communal lands based on customary land tenure. The principle associated with the res communis is that no individual can claim ownership over resources (Gebreamanuel & Mekebo, 2018, p. 107). This principle is particularly relevant regarding land in Greenland, which can be likened to air or water - resources that no one can truly own. This means that the society essentially holds the land in Greenland and belongs to no single person or entity. This unique situation raises essential questions about property rights and the relationship between humans and the natural world.

Land use permits are official authorisations that allow the use of specific areas of land or water for a particular purpose. These permits can be granted for permanent installations in the water, such as bridges, piers or utility lines on the seabed. Similarly, land-based structures such as buildings and roads can be authorised through land use permits. Furthermore, activities on or in the inland ice, such as research or exploration, can also be authorised through land use permits. Using 'land' in land use permits or the Greenlandic term 'nunaminertamik atuineq' is inaccurate as the right of use can be on water and ice.

The municipality is the authority for all of its territory. The municipal territory is defined in the Act on Division of Greenland into Administrative Parts (landsdele) and Municipalities[14] where the boundary towards the sea, the boundaries of the municipalities are formed by the baselines, according to United Nations Bulletin no. 56, Law of the Sea. The municipality has the territory defined as inner territorial waters and the outer water beyond three nautical miles and to the exclusive economic zone; the Department of National Planning administrates the territory and the National Park under the Ministry of Finance, Government of Greenland.

[14]Act no. 34 of 23/11/2017 on Division of Greenland into Administrative Parts and Municipalities

Land use regulation

In Greenland, land use is governed by Sections 27 and 37 of the Planning Act. According to Section 27(1) of the Planning Act, land can be utilised when the municipality has adopted a plan for the land. Furthermore, Section 27(3) of the Act states that the municipal council must accept an application for area allocation if detailed provisions have not been or will not be provided. Suppose an application fully complies with the municipal plan's provisions. In that case, the municipal council must take the initiative to provide detailed provisions for the sub-area if necessary to realise the project.

In addition to the above, Section 37(1) of the Planning Act requires authorisation from the land use authority to use an area for buildings, other fixed installations, or any other use that would withdraw the area from the general public's use. This includes the inclusion of land for intensive cultivation. Therefore, any project that uses an area for building or cultivation must obtain authorisation from the land use authority under Section 37(1) of the Planning Act.

The Planning Act proceedings of 2010, in section 37(4), describe a trial in the Court of Appeal of Eastern Denmark in 1993 regarding a plot of land in Nuuk (Naalakkersuisut, 2010, p. 50). This trial established a precedent for the area allotment (land use permit) in Greenland. The Government of Greenland recognises that the result of this trial is the legal foundation for land allocation practices in Greenland.

The case concerns a contractor who received an area allocation on October 11, 1984[15]. The entrepreneur set out to construct a house and mortgaged it for 660,000 DKK to a bank in Greenland. However, the contractor could not repay the credit due to bankruptcy, and the bank sued the municipality for the mortgage loss.

The Court of Appeal of Eastern Denmark found that the municipality had set a deadline for construction to begin within one year and completion within two years. The deadline expired on October 1, 1986, and no extension was requested. The construction activity on the building site had to be continuous to extend the deadline. However, the building work stopped after the foundation was cast in 1986, and the unused building kit on the site was deemed irrelevant. The building kit was valued at around 150,000 DKK.

[15]The Court of Appeal of Eastern Denmark verdict on building plot no. 4 on Gertrud Rasksvej by Katak ApS of 23 September 1993

The municipality was entitled to revoke the area allocation on December 1, 1989, as the time limits in the permits had been exceeded, and it had not been proven that the municipality had pursued illegal purposes. The Court of Appeal of Eastern Denmark found that the bank was only entitled to the value of the building kit, not the total mortgage amount.

This case highlights that land in Greenland has no value and that only the added value of what has been built on the plots has value and can be sold, bought and mortgaged.

As mentioned earlier, there is a controversy over what should be considered real property in Greenland for land registration. The Land Registration Committee has yet to reach a consensus on the matter. Furthermore, there is a debate on whether mortgages should be allowed to be created on land use rights. However, the Court of Appeal of Eastern Denmark and the land management in Greenland have recognised that land use rights can be mortgaged, but only for the added value. It is important to note that Section 19 of the Danish Land Registry Act, which does not apply to Greenland, allows the building owner to mortgage or register their land use right when they are not the land owner. This provision was discovered during my previous project when I collaborated with the Danish Geodata Agency (Karlsen, 2023b, p. 37).

The Greenland Mortgage Act[16], passed by the Danish Parliament in 1967 and slightly modified in 1979 and 1989, is still in effect today. However, the Land Registry Act for Greenland has not been updated since 1989. This act governs whether the Court of Greenland records registrations in a physical book or digitally. In contrast, the Danish Land Registry Act[17] was updated in 2009 to allow for digital registration in the Land Registry. The Land Registration Committee for Greenland, which falls under the Danish Ministry of Justice, needs to consider the long-term implications of their actions. It is only interested in implementing the standard in land administration, which is freehold ownership, contrary to the traditions and practices specific to Greenland.

Some citizens of Greenland who are accustomed to the private ownership of land in countries with freehold are having difficulty adjusting to the land administration practice in Greenland. Some have called this practice communistic and prefer to avoid the lottery element, as every citizen who meets the municipality's criteria can

[16] Act No. 154 of 10/05/1967 for Greenland on Mortgage

[17] LBK no 1075 of 30/09/2014 - Danish Act on land registration

receive an area allotment.

Different from countries with freehold, there is no financial cutoff for building in Greenland, where land cost is often a financial aspect. To address this issue, the Planning Act's addendum was amended in 2015 to provide greater security for prominent developers. This amendment allows them to bypass the practice of allowing citizens to be eligible for the plot. Since then, there has been a surge of new development where developers apply for a more significant building area than the usual projects of individual family home construction applications.

The Government of Greenland proposed that these projects could take place in unbuilt urban areas, and developers began to apply them where there was room in urban areas, disregarding municipal plans. In many cases, the municipal council in Nuuk has found itself with no tools to deny these projects. Some projects have been prepared and made public in a hearing, creating dissatisfaction or resistance to the proposals.

6.1 Creation of land value

Urbanisation and population growth have led to a scarcity of sites for buildable plots in Greenland. The municipality can effectively coordinate public investments in utilities, roads, and building plot preparation through town plans (Greiffenberg, 1998, p. 211). The national treasury has a fund that municipalities can apply to prepare building plots. The municipality's expenses will then be required to be paid by the applicant for the building plot.

The scarcity of available land has given rise to an economic value for well-located plots, even though private land ownership does not exist in Greenland. The Greenland Self-Government is the largest developer and homeowner, and private homeowners can sell their houses for a price that exceeds the property's actual value due to the land value or land interest rate. Differences in land value for locations also exist, with properties in favourable locations and great views commanding higher values. Public investments in land development or urban planning can also increase the value of specific plots. As a result, location and scenic values have emerged aside from a general value based on the scarcity of buildable land (Greiffenberg, 1998, pp. 211-212).

When a house is sold, the homeowner collects the land interest rate, which represents the increase in the value of the land. No rent or tax is charged for the use of the

land. The Greenland Committee of 1960 recognised the emergence of the land interest rate problem due to a modernisation policy. They also acknowledged the unwanted situation of private individuals capturing socially generated increases in value. It was realised that the opportunity to do something about it was present before the issue of land interest rates became more pronounced. As a result, a committee of valuation and tax experts was established. However, since then, action has yet to be taken. The problem of rising land interest rates has been exacerbated since the introduction of mortgage credit. This has made it easier to capitalise on rising land interest rates. The Greenlandic government may consider implementing land taxes, rent, or lease fees to generate revenue. This would enable them to capitalise on the increase in socially generated land interest rates. Greenlandic politicians have not addressed the issue for fear of creating a sizeable bureaucratic administration (Greiffenberg, 1998, p. 212).

6.2 Taxation of use rights in Greenland

In 2011, the Tax and Welfare Commission published its report "*Our prosperity and well-being - action now*". The report suggested that the government consider implementing ground lease rent and property taxes in larger settlements to diversify Greenland's economy (Tax and Welfare Commission, 2011, pp. 391-392).

The commission has suggested that ground rent is a simple model that is easy to manage and has a negligible impact on the economic behaviour of citizens. This model keeps the return on additional work or investment the same. The commission proposes a floor tax model where the area granted for use is taxed per square meter of floor space. It is ideal to set the rates based on the market price for that area in that location. However, the commission says Greenland has no land renting market, making it impossible. Therefore, the report concludes that a starting point must be based on predetermined rates, assuming an area's value can never be less than DKK 0. The commission sees that a floor area tax will likely have a reasonable distributional profile. It reflects the actual usage of floor space, with middle and high-income groups expected to consume more square metres than low-income groups (Tax and Welfare Commission, 2011, p. 392). The commission has presented a clear set of points. However, they have failed to establish a connection between the current state of the real property market and its reliance on the leasehold system. While the points made may be valid, it is vital to consider the impact of the leasehold on the overall

functioning of the real estate market.

Since most land use permits are on municipal territories, should a future tax be national or municipal?

During my employment in the National Planning department, I looked into different land use rental costs based on technical maps from 2018 and later data from inhabited places only. The calculations are based on building footprints mapped by the national mapping company, Asiaq, and if there was a rental cost of 15 DKK per m^2, it could bring in 41.6 mio. DKK nationally. That means a single-family house with 80 m^2 would have to pay 1,200 DKK annually. Another model could also be proposed, which is larger settlements that experience more congestion of land resources, and thereby, rental prices could be higher. So, Nuuk and other municipal centres could have a rental price of 50 DKK per m^2, and then the rental income in those five towns would be 73.82 mio. DKK, which means that a single-family home with 100 m^2 would cost 5,000 DKK annually. The downside of this footprint approach is that it would interpreted that multistorey apartments with low footprint would be less expensive compared to individual houses or apartment blocks. Another challenge is that the mapping company does not map the open land as the Danish Agency for Data Supply and Infrastructure does map the open land, so even though the collective property is being used exclusionarily in the open land by individuals, it would not be feasible to collect land use rents from these, as some huts in the open land were built before the land use register was established and as I encountered in my second-semester project municipalities only registered points in the open land and not the actual footprints (Karlsen, 2023a, p. 16). Buildings in the technical maps existed in 2018 or before based on when the mapping company visited the settlement, and it involved every building regardless of ownership.

Furthermore, it would make sense to include all associated permits for a right of use for buildings when calculating land rent, not just the building itself, such as stairs, balconies, and sheds.

The rental income could be used to develop future building sites, finance infrastructure repairs, or invest in affordable housing in the municipality.

7 Analysis: Leasehold in Greenland

This chapter examines the dynamics of land administration, planning, and environmental protection for leasehold land using the ASID model and Indigenous planning principles. It analyses the practices of Greenland, Denmark, Norway, and the Netherlands, focusing on legal frameworks, policies, and implementations. The aim is to identify lessons for policy refinement and institutional adaptation in Greenlandic land administration while exploring indigenous perspectives on sustainable land use.

7.1 Path dependence

Danish and Norwegian traders and missionaries established colonies in locations with good natural harbours for safe anchorages. These colonies developed into towns, but their location hindered urban growth, especially in the harbour areas. Greenland still holds on to the placement of settlements. Tom Greiffenberg and Jes Adolphsen say that Greenland is the only planned society in the world. Moreover, the total social planning process in Greenland succeeded (Adolphsen & Greiffenberg, 1998). The politicians' reactions to withdrawing the proposal for the national plan report in 2016 show they want to maintain dispersed settlement patterns. Alternatively, it can be interpreted that the politicians want to avoid discussing the closure of inhabited places even if it happens.

It is a path-dependent on the government and municipalities, who invest in constructing buildings and infrastructure in a particular location. Once the initial investment has been made, there is a tendency to continue investing in the same area rather than relocating or building in new, more prosperous areas. The result is a reactive sequence requiring further investment to modernise existing infrastructure or buildings. However, moving the population to a new settlement or investing in a new location can be prohibitively expensive, continuing the path-dependent cycle. However, the option is not considered since the government may look at all the years it has spent money on providing services and the cost of construction to that existing place.

The people of Greenland desired more autonomy and control over the jurisdiction of Greenland, which Denmark governed. This desire for autonomy has led to a series of self-reinforcing events that have made Greenland increasingly independent from

Denmark. For example, Greenland transitioned from being a colony to a county of Denmark in 1953, became a Home Rule territory in 1979, left the EU in 1985, and, since 2009, has become a Self-Rule government that governs Greenlandic areas without interference from Denmark or the EU. The Self-Rule government can negotiate with Denmark to take over areas of authority such as justice or foreign policy. The recent Mining Act, which prohibits the extraction of radioactive particles, can also be seen as a significant turning point reflecting the ancient Greenlandic view of nature.

7.2 Comparative analysis

This section will analyse the similarities and differences between European countries' practices and the Greenlandic approach to land administration.

7.2.1 Leasehold management

In Norway and the Netherlands, municipalities and private individuals can act as land owners in a leasehold. The leasehold agreements in these countries are highly detailed and binding, specifying the terms of use, payment, and duration of the leasehold period. However, the situation is somewhat different in Greenland, where the municipalities play a more significant role in leasehold arrangements. This is because all of the land in Greenland is managed by the municipalities, making them the primary land owners. In contrast, in the Netherlands, only 25 per cent of the land is publicly owned, with the rest privately owned.

In Greenland, the leasehold agreements do not specify the end of the land lease. The municipality only defines the end-of-use rights for cases where the permit is time-limited, or the municipality may have plans for the area. The use of rights is unlimited in Greenland, and the end of use is not defined. The rights holder has the right to the buildable plot, and even if the rights holder demolishes the building to construct a new one, they still need to apply and follow the local plan for the area. The rights holder still has the right of use to the land even if the building is no longer there. Only when the rights holder fails to apply to construct a new building within a reasonable period can the municipality consider the land cleared for utilisation.

Municipalities do not commonly obtain the right to use properties from rights holders to create new, leaseable land. In Nuuk, before the beginning of the runway extension construction, the municipality provided new buildable plots to the rights holders residing in the closest proximity to the runway and those who opposed this

decision got expropriated.

Greenland and Denmark do not have a Ground Lease Act to regulate land leasing. However, they have other laws in place to manage land leases. In Greenland, the land lease is managed through the Planning Act, while in Denmark, there is a specific law regulating rent in holiday homes on leased land.

In contrast, Norway and the Netherlands have implemented a Ground Lease Act to regulate land leasing. This act outlines the terms and conditions of land leases, such as the duration, rent, and renewal of leases. The Ground Lease Act aims to provide clarity and transparency in the land leasing process and protect the rights of both the land owner and the leaseholder.

Leasehold land is categorised differently in various countries. In Denmark, it is divided into parcels, while in allotments, the individual plots are separated from the parcel into smaller lots. In Norway and the Netherlands, leasehold land is considered a distinct property. However, the practice in Greenland leasehold land is defined as the footprint of the building.

Leasehold land in Norway and the Netherlands is used for housing buildings and holiday homes. In Denmark, holiday homes and allotments are often on leasehold land. Since all the land is leasehold in Greenland, every land use is on leasehold land.

7.2.2 Property market

In Norway, the tenant is considered the only real buyer of the property. The right of use to the land can be mortgaged in Norway. In Greenland, there is a well-functioning market built around renting the land and the rights to the land follow the owner of the building. A report by Jesper Paasch shows that the Netherlands has two different types of usufruct. The normal kind can be sold or mortgaged, while the second kind is the right of use and habitation, which is personal and cannot be mortgaged (Paasch, 2011, p. 53). The wording in section 37(4) of the Planning Act about the right of use to land not being subject to sale or mortgage is unfortunate since it could have caused a misunderstanding by the Danish Land Registration Committee for Greenland. The phrasing could be due to language barriers or the intention to limit the land use permit to construction (the two-year right), which cannot be sold or mortgaged. In reality, the right of use for the construction to realise the building is often mortgaged to finance the work and materials. The right of use to land in Greenland is similar to the normal kind of usufruct that exists in the Netherlands. In Denmark, the right of

use to a building on leased land is also part of the real estate market, and the right of use to the building can be mortgaged.

7.2.3 Planning

Both the Norwegian Planning Act and the Greenlandic Planning Act share several similarities. One of these similarities is the inclusion of provisions related to building permit cases. Interestingly, these provisions in the Norwegian Planning Act can be comparable to the time-limited land use required for constructing buildings in Greenland.

In Greenland, the municipality is responsible for land use and planning throughout its territory. They can change the category of an area in the open land zone (K, L, M, N, O) to an urban zone (A, B, C, D, E) in a municipal plan, which allows for urban expansion. In Denmark, an Executive Order[18] regulates how municipalities can argue for increasing the urban environment. However, the recent Planning Act in Greenland governs how municipalities plan for urban environments. If Greenland had a similar Executive Order for planning urban growth, it could lead to a more thoughtful urban environment instead of urban sprawl.

Moreover, there is no Executive Order on the environmental assessment of plans in Greenland. As a result, the municipality is not required to account for the environmental impact of urban growth. The Ministry of the Environment in Greenland only assesses the impact of the environment in the open land. However, municipalities can bypass this by changing the zone to an urban one before extensive land use occurs beyond the existing urban zone.

The Norwegian government is set on maintaining a good ecological status by controlling human use and sustaining the country's nature management regime. Norwegian expert panel considers that well-functioning ecosystems benefit society. However, achieving good ecological status may not be the objective everywhere due to other public interests and pressures beyond national control.

The European Union has set a goal to limit the expansion of urban areas by the year 2050 (Science for Environment Policy, 2016). One way to achieve this is by promoting the reuse of already developed land, which can enhance the quality of life in densely populated urban centres. Additionally, the EU plans to improve public transportation infrastructure and safeguard the quality of agricultural areas in and

[18]Danish Executive Order no. 940 of 26/06/2017 on planning urban growth

around cities (Science for Environment Policy, 2016).

How can Greenland learn from the EU's planned approach to governing the urban-open land balance when land pressure is lower than in Europe?

The inaction in Greenland is not a sustainable approach. The argument of having so much untouched nature is a fallacy when nature around the settlements is polluted; for example, there is no wastewater treatment in Greenland, and the untreated wastewater is piped directly out to the sea. There needs to be more consideration of the effects of untreated wastewater on the fishing industry since fishermen fish near the settlements.

The approach in Greenland must include measures to preserve the natural environment and prevent reckless urban expansion.

7.2.4 Payment for the lease

The collected data on the Netherlands show that leasehold is more fiscally advantageous than ownership of the property. The lease payment can be a lump payment for the agreed period or a periodic payment per month or year.

The advantage of Greenland is that it only pays for case handling in the municipality for around 2,000 DKK and has no property tax or lease fee. The advantages should be overseen because the site preparation fees can be as high as 2.5 mio. DKK (Sermersooq Municipality, 2021). The cost of site preparation is divided for the area as a whole, and some areas require more work than others—the 2.5 mio. DKK site preparation fee is for an industrial site with a footprint of 4,000 m m^2.

The Norwegian and Danish are similar in that rent payment is regulated through a contract, and both countries have an act on how the rent can be calculated.

7.3 Greenlandic Property Market

One begins to believe that freehold is necessary to have a well-functioning property market, by evaluating the collective property market in Greenland it is crucial to consider Greenland's unique socio-economic and cultural context. Traditionally, Greenland has a system where land is held collectively by the community and administrated by the government rather than being owned by individuals or private entities. The role of private ownership in property markets is widely recognised as providing individuals and businesses with exclusive rights to use, develop, and transfer land. Private ownership incentivises investment, facilitates market transac-

tions, and fosters a sense of ownership and responsibility. In Western institutions, private property rights seem to be considered fundamental to economic growth and the efficient allocation of resources. However, Greenland's absence of private ownership challenges conventional notions of property rights and land tenure. Individuals may lack the security and incentives to invest in land improvements or development projects without private ownership. This could potentially hinder economic growth, limit opportunities for entrepreneurship, and restrict access to financing. Despite these challenges, Greenland's communal land ownership system aligns with traditional Inuit values and cultural practices. It emphasises community solidarity, collective decision-making, and environmental stewardship. Inuit cosmology, which makes no distinction between the living, whether humans, animals, or plants, underscores the interconnectedness of all life forms and the importance of harmonious coexistence with nature. In balancing economic efficiency with social and cultural values, policymakers in Greenland face a complex dilemma. While private ownership may offer economic benefits, such as investment incentives and market efficiency, it may also challenge traditional land management practices and communal cohesion. Moving forward, efforts to strengthen property markets in Greenland should involve careful consideration of the implications of different property rights systems on economic development, social cohesion, and environmental sustainability. Reforms to improve land administration, clarify property rights, and enhance land use planning and development mechanisms may be necessary. Additionally, promoting alternative forms of land tenure, such as long-term leases or community-based management arrangements, could provide a middle ground that combines the benefits of private ownership with the values of communal stewardship. While private land ownership is often associated with a well-functioning property market, Greenland's unique context calls for a nuanced approach that recognises and respects traditional values while fostering economic growth and sustainable development.

7.3.1 Interpretation of Section 60(2) of the Planning Act

Section 60(2) of the Greenlandic Planning Act states that if the municipal council becomes aware of an illegal situation, it must order the owner of a building or facility or the user of an area to legalise the situation within a deadline set by the municipal council.

It should be considered a violation of the lease agreement if buildings are no

longer in use. Municipal councils must take action against unused buildings. This is because the land use permit was granted with the understanding that the buildings would be perpetually in use. Therefore, an abandoned building that is no longer in use is in breach of contract. The maximum time frame for a building no longer in use should be five years to ensure that the economic interests, such as the mortgage, are cleared.

The municipality can then either take the building back and bear the cost of demolition and re-establishment of a building plot that could be offered to citizens and businesses or sell the building and make agreements on the future use of the building plot. Buildings no longer in use should be seen as such, and this should be balanced with the monetary linkages to the mortgage and real estate market. Alternatively, what was once erected should be considered part of the land since the standard agreement of the land use permit dictates that the land should be returned to its natural state. Therefore, buildings no longer in use could be seen as something with no longer a purpose, like when hunter societies leave a summer or winter settlement behind when it is no longer fruitful.

7.3.2 Limits of the right of use

In legal terms, the land use permit evolves into an exclusionary right that can be expropriated. Still, it is first when the rights holder realises the land use permit according to what the municipality gave them rights to build according to the municipal plan and local plan for the area where the building is placed that the land use permit can be expropriated. Recognising that land in Greenland has no value and that initiating construction of a building according to the land use permit is where one begins to exercise their exclusionary rights to the allotted land. The time frame for the construction of the building is typically two years after the date of granting the permit. The municipality can reclaim the land when the rights holder does not uphold the two years to realise the construction. The rights holder can apply for a one-year extension of the land use permit but has to have a reason for the delay.

Under Section 37 of the Greenlandic Planning Act, it is not allowed to sell a land use permit that has yet to be put into effect, meaning that the building is not finished. If the rights holder cannot use the permit, they must agree with the municipality to transfer it to another party. In such cases, the rights holder may be entitled to a reimbursement for the site development fee and can sell the added value to a new

rights holder who can utilise it for construction. However, the rights holder may be required to provide documentation of the added value if they wish to transfer an unfinished construction site. This ensures that land cannot be sold with just the foundations, as the permit is granted for a house and not just the land. It is crucial to note that Greenland's land cannot be traded.

7.3.3 Greenlandic approach to nature and land

The ancient Inuit community viewed nature as equally significant and valuable as its human inhabitants, emphasising the interconnectedness of all life forms across species. Despite this profound cultural understanding, Greenland's current approach to nature and natural resources, as governed by the Planning Act and the Environmental Protection Act, still needs to reflect this holistic worldview fully. The Planning Act prioritises economic development over environmental conservation, grounded in an ideology inherited from Danish governance in Greenland. Land use regulations often disregard the intrinsic value of nature and the interconnectedness between humans and the natural world, providing flexibility for zoning changes to accommodate development interests.

To address this issue, it would be beneficial to establish a protection zone that preserves nature in its natural state and prevents it from being altered in any municipal plans.

Implementing the Rights of Nature offers an opportunity to bridge this gap between traditional beliefs and contemporary governance. By granting legal rights to ecosystems and species, the Rights of Nature recognise and uphold the inherent value of nature, aligning with the ancient Inuit perspective that views all life forms as interconnected and worthy of reverence. This framework promotes a more balanced and sustainable mindset among Greenlandic people, fostering tremendous respect for the environment and its vital role in sustaining life on Earth. Those who support granting legal rights to nature believe it is much more than just a way to safeguard the environment. Instead, they see it as a way to recognise the significance of nature in their daily lives and the spiritual beliefs of Indigenous communities. Incorporating this perspective into the legal system acknowledges that nature has a status similar to that of tax laws (99 percent Invisible, 2022).

The idea of the rights of nature is gaining popularity worldwide, but there is a difference between its popularity and its effectiveness. Ecuador is the only country

where these laws have significantly impacted, as it passed a constitutional amendment for the 'right of nature' in 2008. Recently, a court in Ecuador ruled that mining in the Los Cedros Reserve would violate the rights of nature and should not be allowed (99 percent Invisible, 2022).

7.4 Land Registration in Greenland

In Greenland, the lessors of leasehold land are the government and the municipalities since they administer the collectively owned land. If a new Leasehold Land Act were to be introduced, it would significantly impact the rights and responsibilities of lessors and lessees. Additionally, as the authority on real property agreements, the Danish Ministry of Justice may need to be involved to ensure that the new act complies with existing laws and regulations. If properly implemented, a leasehold act could provide greater clarity and stability in the real estate market in Greenland, benefiting both lessors and lessees alike. The Planning Act cannot handle payments for leasehold land, which may be considered a unique property tax. As a result, the government might introduce new tax legislation to regulate leasehold land instead of a ground lease act and revise the Planning Act to include more specific provisions on the right of use and terms of use. Regulating leasehold land could lead to less speculation on plots, and the building owner (lessee of land) would be aware that the building should be demolished at the end of its use. If the rights holder has no plans to build a new structure, they must return the plot to the municipality to offer it to interested parties.

Additionally, the Danish Ministry of Justice should update the Greenland Mortgage Act. Currently, the Land Registry requires coordinates in x and y for a given town and a building number counted in the 18 municipalities before 2009. In an updated provision, a land use permit should be required to register the right of use in the Land Registry to remove the mismatch risks between the land use register and the Land Registry. The updated Mortgage Act could allow registering land use rights digitally, making it easier for the authorities to cooperate on properties to benefit citizens and companies.

Permissive conditions are prevalent since there has yet to be a built-up of pressure against this unregulated or lacking cooperation between the land use registry (Governed by Greenland) and the Land Registry (Governed by Denmark). If there had been a case of fraudulent behaviour where a building was sold to multiple peo-

ple, then who is the rightful owner of the building, the one who registers ownership change in the municipality (land use register) or the one who registers ownership in the Land Registry? The institutional framework in Greenland is that the municipality, by default, should change the rightsholder to the purchaser of the building and will not oppose the change of rights when the use of the building does not change. On the other hand, land registration is contractual, and the rightsholder that has registered ownership in good faith is the rightful owner of the right to the building. The registration is protected against someone trying to possess the right. The change of ownership in the municipality costs around 300 DKK in Sermersooq Municipality (Sermersooq Municipality, 2023). Registration in the Land Registry has a base cost of 2,000 DKK in Denmark and after that a 0.6 per cent of the price of the building (dokument24, 2024), so it is evident that registration in the Land Registration is more costly and eventual fraudulent behaviour could negatively impact the one who registers the purchase without having the change of right of use in the municipality. It was not possible to find a price for registration in the Greenlandic Land Registry, but the cost will be similar to the Danish registration. It would be a good proactive measure instead of waiting for the fraudulent behaviour to make adjustments in the legislation both in Greenland and in the Danish legislation on the mortgage act in Greenland. Moreover, the solution is that the transfer of ownership in the land use register is the legal statute since the Planning Act regulates land use in Greenland, and the land use permit is to be a document that is required to register ownership in the Land Registry.

The Land Registration Committee for Greenland's recognition of the ability to mortgage land use rights could enable Greenlandic citizens to receive credit from international mortgage institutions rather than solely relying on the Greenlandic bank. To benefit citizens and create a more transparent Land Registry, the Danish state, responsible for the Mortgage Act for Greenland, should establish a digital registry and abandon manual processes. The Greenlandic government could demand that the Danish state fulfil its legal obligation and provide a digital Land Registry, given that digitising physical books could be expensive.

The land use register was created in 1993 and was digitised through GIS in 2008, where municipalities handled applications through the register. The Open Data Programme in Greenland is working on a new land use register. However, the challenges here are that there are buildings that have existed prior to the creation of the register,

and some municipalities still need to digitise their archives or transfer them to GIS. To introduce property tax and land lease fees, it is necessary to know the actual owner of the buildings.

8 Discussion

This section explores different subjects and their relevance to the research objectives. The information gathered will provide valuable insights to make informed decisions based on the research findings.

8.1 Proposal for a Greenlandic Constitution

The government of Greenland took a significant step towards self-governance by establishing a commission to draft a constitution for the country. One of the key provisions in the draft is related to property ownership (Section 12), which is a copy of Section 73 of the Danish constitution (Tunngavik, 2023, p. 54). However, it is worth mentioning that the draft does not mention any special provisions related to property construction in Greenland.

It is important to note that while the buildings on the land are private property and are exclusionary, the land itself is leased from collectively owned property. This means that the ownership of the land lies with the collective entity, while individual private owners own the buildings on the land. This arrangement ensures that the land is not subject to individual ownership but is held collectively while allowing for private ownership of the buildings on the land.

The proposed Greenlandic constitution has been the subject of much discussion and debate, with many stakeholders weighing in on various aspects of the document. One area identified as a potential shortcoming of the proposal is the need for more attention given to the nature of collectively owned land construction in Greenland. This is a crucial issue for many people in the region, as the collective ownership of land is a cornerstone of the traditional way of life for the indigenous people of Greenland. By addressing this issue in the constitution, the rights and interests of these communities may be noticed or addressed in the future.

If Greenland were to become independent, its population might not be considered indigenous according to international standards. Consequently, it may lose some legal protections and rights granted to indigenous people. These factors must be considered when proposing the constitution of Greenland.

8.2 Ground Lease in Greenland

Greenland has a small population and a unique economy, heavily dependent on fishing and subsidies from Denmark. Currently, there is no property tax in Greenland, which means that property owners are not required to pay taxes based on the value of their property or pay for the collectively owned land the building sits on.

However, implementing a property tax and land lease fee would benefit the community. The idea behind this argument is that a property tax and land lease fee could generate revenue that could be used to fund public services and infrastructure projects. In this way, building owners would give something back to the community and help improve the quality of life for the citizens in Greenland. It could also affect the number of abandoned buildings since paying land lease fees and property tax on an abandoned building would be costly. This will result in fewer abandoned buildings, and the plots will be returned to the municipality so the plots can be reintroduced to the public.

It could also be argued that it could discourage investment in the real estate market and make owning property less accessible for low-income families since they would not have the economy to pay for a house, and that could result in only having the option to buy a house that is not well built or to keep living in rental apartments. Moreover, those who are against introducing taxes and fees perceive that implementing a property tax and land lease fee would be burdensome for those who own property since they sit in some expensive homes and would have difficulty selling their houses.

A land use permit issued by the municipality can, after the provisions in the Planning Act, include a condition stating that the building must not be abandoned to ensure that there is no speculation on land. This means that the building must be continuously used and maintained, with access to electricity, water, and heating, and all utility payments must be up to date. Additionally, the property's pathway must be clear of snow, and its structure must be in good condition. The property must also have a mortgage. The municipality may permit houses to remain unoccupied for a maximum of five years, after which the right to use the property may be revoked.

Is it possible to avoid artificial inflation of house prices by implementing property taxation and land lease fees? The market becomes the driving force when property taxes are calculated based on sales prices, and a land lease fee may influence how

big the houses will be built. Homebuyers might consider whether they can afford an increased property tax if the house costs DKK 6-8 million, even though the cost of construction alone is just DKK 3 million. This raises the question of whether property taxes and land lease fees could be used to counteract this trend.

9 Conclusion

The problem statement for the project is as follows:

"How can leasehold management affect land use and development in Greenland?"

The project illustrates that leasehold management in Greenland negatively impacts land use and physical planning. This is because the parties involved in leasehold management do not actively engage about the terms of the land use, and there need to be more precise contractual agreements on how the leasehold plot should be used and maintained. This has led to an inability for municipalities to engage in dialogue with citizens on how the plots can be kept in circulation. As a result, there may be a need for expropriation if the owner of a building fails to uphold their agreement to keep the building usable, which could have been avoided with clear contractual agreements.

Furthermore, the project shows that leasehold management has the potential to affect land and development in Greenland positively. It is found that both the Norwegian and Dutch Ground Lease Act provides clarity and transparency in the leasehold process and protects the rights of both the lessor and the lessee. Moreover, a more proactive use of Section 60(2) by the municipalities could increase the circulation of buildable plots within the built environment when the municipalities provide precise wording about when they see a land use permit is no longer in use. A ground rent or land lease fee is a vital component of leasehold management in European countries, ensuring income for land owners. In Greenland's case, the fees would be collected by the municipalities. Land lease fees should be introduced when Greenland is experiencing a lack of income sources, and even the tax and welfare commission points out that land lease fees should be introduced without negatively affecting the economic behaviour of citizens.

Introducing stricter regulations on current land use could increase costs and perceived risks for mortgage loans. Banks may require more safety or collateral if the two-year land use permit is not considered a right of use to the land. However, the benefits of more transparent and precise leasehold agreements will outweigh the adverse side effects since land is more effectively utilised. Greenland would have fewer unsightly abandoned buildings and ensure more homes for people instead of empty,

unusable buildings with utility lines, which is far cheaper as the area's site development is paid for. Citizens must not wait for the municipality to plan new residential areas beyond the urban environment and must pay for the buildable plot preparation.

Greenland's leasehold management system is rooted in the traditional Greenlandic hunter principles regarding property. These principles include the right to acquire, the right to utilisation, and the right to transfer. The Danish state respected and adopted these principles to acquire untouched natural resources and build settlements in Greenland.

The Danish state believed that collectively owned land was in keeping with ancient Greenlanders' attachment to the land. The remoteness of Greenland and its distance from Denmark also ensured that land in Greenland has not become privately owned like it is in Denmark.

10 Perspectives

It might be worth investigating the land administration practices of indigenous Inuit communities in North America compared to those employed in Greenland, which Denmark influenced. Such a study could uncover similarities and differences in Inuit approaches to land management and provide valuable insights into the cultural, political, and historical factors that have shaped them.

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A Appendix - Planning Acts in Greenland

Overview of planning regulation in Greenland

Year	Act
1782	Instruction from the Royal Greenlandic Trade
1913 and 1917	Settlement regulations
1953	Executive Order no. 117 on buildings in West Greenlandic towns
1958	Circular on business procedures between the Ministry of Greenland and GTO
1977	Act no. 248 for Greenland on land use, urban development and buildings
1979	Executive Order no. 470 for Greenland on the design and content of town plans
1981	Greenland Parliament Act no. 1 on land use, urban development and buildings
1986	Greenland Parliament Act no. 6 on land use and planning
1987	Home Rule Executive Order no. 25 on municipal and area planning
1992	Greenland Parliament Act no. 17 amending Greenland Parliament Act on land use and planning
1992	Home Rule Executive Order no. 23 on land use and planning
1994	Home Rule Executive Order no. 39 amending Home Rule Executive Order no. 23 on land use and planning
1994	Home Rule Executive Order no. 43 amending Home Rule Executive Order on land use and planning
2008	Greenland Parliament Act no. 11 on planning and land use
2009	Home Rule Executive Order no. 7 on municipal planning and land use
2010	Greenland Parliament Act no. 17 on Planning and Land Use
2015	Greenland Parliament Act no. 39 amending the Greenland Parliament Act on Planning and Land Use
2023	Greenland Parliament Act no. 66 amending the Greenland Parliament Act on Planning and Land Use