

# 15-Minute City and Rural Development

Investigating the village of Asaa in accordance with the 15-Minute City Concept

Sara Diana Fayed

Master's Thesis

Urban Planning and Management



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STUDENT REPORT



**AALBORG UNIVERSITY**  
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**Department of Planning**

Rendsburggade, 14

9000 Aalborg

<http://www.plan.aau.dk/>

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**Author:**

Sara Diana Fayed

**Supervisor:**

Malene Freudendal-Pedersen

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**Synopsis:**

During COVID-19, the Danes became more conscious of their lifestyle and sustainability. There emerged a need for essential services to be located within a reasonable distance from residences. This trend also emerged internationally and was supported by Carlos Moreno's 15-Minute City concept, which has been in existence for many years. Simultaneously, as Danes seek essential services near their residences, more people are moving from larger cities to settle in nature-oriented towns. This implies a need for cities and villages to develop in a way that can support this need. One village undergoing development is Asaa in Brønderslev Municipality in Northern Jutland. With the new development plan and comprehensive plan for the village, Asaa and Brønderslev Municipality are attempting to attract new residents to the village. This report seeks to investigate how Carlos Moreno's 15-Minute City concept can contribute to a positive development in Asaa. This is done with the following research question:

*How can the concept of 15-minute cities inspire the development of the rural village of Asaa in Northern Jutland and as a way to attract new citizens to the village?*

To answer the research question several methods have been applied: interviews, observations, network analysis in GIS. The village of Asaa will be analysed using observations which will be compared to the findings in the interview and the analytical data found through the isochrone analysis in GIS.

## **Preface**

This master's thesis is written by fourth semester student from the Urban Planning and Management (UPM4) master programme at Aalborg University. The thesis was written in the period from 01.09.2023 to 05.01.2024.

The focus of this thesis has been the development of the rural village of Asaa in Brønderslev Municipality in North Jutland of Denmark. The thesis is therefore directed at those interested in rural district planning and sustainable urban development.

The researcher would like to extend thank to Malene Freudendal-Pedersen (Professor in Urban Planning, Department of Planning) for supervision and guidance through this project period. Additional tank you is extended to Jensen [2023] and Mortensen [2023] for their help in answering questions about Asaa.

## **Reading guide**

The Master's thesis is written in chronological order. It must therefore be read as such to ensure the reader a thorough knowledge unless refered to otherwise in the report.

The chapters, sections and subsections are all numbered with the chapters numbered "X", sections "X.X" and subsections "X.X.X". The figures, tables and illustrations are numbered according to the chapters they appear in. The source reference is the Harvard-method.

## **Executive Summary**

The scope of this master's thesis is to investigate how the rural village of Asaa can be inspired by the concept of 15-Minute City in its development and to attract new inhabitants to the village. The village of Asaa has in cooperation with funds, the municipality, and the local council, been under development since 2021. Asaa is the only town in Brønderslev Municipality with a harbor, which is in part why the municipality has chosen to develop the village. Besides the harbor being a point of attraction for the village, the strong local engagement and tight knit community is also a reason for the development.

To investigate how the development of Asaa can become more sustainable and follow the principles of the 15-Minute City concept developed by Moreno et al. [2021], several analyses have been conducted by using interviews, GIS network/isochrone analysis, observations, literature study, and document analysis.

The results of the analysis shows that Asaa is in part following the principles of the 15-Minute City concept with the majority of the village being in the service area of the village's current essential services. The 15-Minute City concept can be of inspiration for the future development of Asaa and similar villages. Moreover, the urban development of Asaa has been citizen-lead with several inhabitants being part of the steering board for the development.

The 15-Minute City concept can inspire Asaa and similar villages to involve sustainability in the planning process while ensuring citizen involvement in the process as well.



# Contents

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Executive Summary . . . . .	iv
<b>1 Introduction</b>	<b>1</b>
1.0.1 15-Minute City in Rural Areas . . . . .	1
1.1 Rural Denmark . . . . .	2
1.2 Brønderslev Municipality . . . . .	4
1.2.1 Development of Districts in Brønderslev . . . . .	7
1.3 Problem Statement . . . . .	7
<b>2 Methods and Methodology</b>	<b>11</b>
2.1 Method of Reasoning . . . . .	11
2.1.1 Method of reasoning for this thesis . . . . .	12
2.2 Observation . . . . .	12
2.3 Interview . . . . .	13
2.4 Network Analysis . . . . .	14
2.4.1 GIS Isochrones in Asaa . . . . .	14
2.5 Literature study and Document Analysis . . . . .	15
<b>3 Theories</b>	<b>17</b>
3.1 15-Minute Cities . . . . .	17
3.1.1 The concepts of the 15-Minute City . . . . .	18
3.1.2 Delimitation of 15-Minute City Concept . . . . .	20
3.2 Model of analysis . . . . .	20
<b>4 Analysis</b>	<b>22</b>
4.1 The rural village of Asaa . . . . .	22
4.2 Network analysis of Asaa in relation to the 15-Minute City Concept . . . . .	24
4.3 Observations . . . . .	31
4.4 Summation . . . . .	33
<b>5 Discussion</b>	<b>35</b>
5.1 Discussion of Findings in the Rural Village of Asaa . . . . .	35
5.2 Discussion of isochone maps . . . . .	35
5.2.1 Migration pattern and how it affects Asaa . . . . .	36
5.2.2 The future of sustainable villages . . . . .	37
5.3 Summation . . . . .	37
<b>6 Conclusion</b>	<b>40</b>
6.1 Reflections . . . . .	40
<b>Bibliography</b>	<b>41</b>

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<b>A</b>	<b>Appendix</b>	<b>44</b>
A.1	Interview with Line Toft Jensen, Planner at Brønderslev Municipality . . . . .	44
A.2	Interview with Villy Mortensen, Chairman of Jernstøberiet in Asaa . . . . .	45

# Introduction

# 1

In recent years, the concept of 15-minute cities has gained prominence in urban planning, driven by the challenges posed by traffic-related issues and a growing environmental consciousness [C40 Cities Climate Leadership Group, 2021]. This shift is largely attributed to adjustments made during the COVID-19 pandemic and the increasing focus on sustainability, especially in alignment with the United Nations' 11th Sustainable Development Goal (SDG) for Sustainable Cities [United Nations, 2023].

The COVID-19 pandemic underscored the significance of having essential services within local communities during lock downs, emphasizing the need for nearby functions due to social restrictions [Friluftsrådet, 2021]. The 11th SDG not only addresses climate-proofing cities but also envisions changing the way inhabitants live by reducing dependence on fossil fuels and minimizing the necessity for transportation outside local communities, promoting overall sustainability [United Nations, 2023].

The 15-minute city concept aligns with SDG 11 by advocating for citizens to have access to essential services within a 15-minute walk or bike ride. This principle, popularized by urban planner Carlos Moreno, offers a response to challenges posed by urbanization, traffic congestion, environmental concerns, and the quest to enhance quality of life in large cities [C40 Cities Climate Leadership Group, 2021].

Key principles of 15-minute cities include access to essential services, walk-ability, reduced dependency on cars, support for the local economy, community engagement, and sustainability. To address urban challenges, implementing the 15-Minute City concept necessitates urban planning, policy changes, and community involvement to create more accessible, sustainable, and livable cities [C40 Cities Climate Leadership Group, 2021].

In larger cities, the distance to different essential services or activities can often be too great, requiring more than a 15-minute travel time [C40 Cities Climate Leadership Group, 2021]. During the COVID-19 pandemic, local communities responded by creating 'city centers' within cities to meet residents' needs for services in their everyday lives, reflecting the adaptability and relevance of the 15-Minute City concept.

## 1.0.1 15-Minute City in Rural Areas

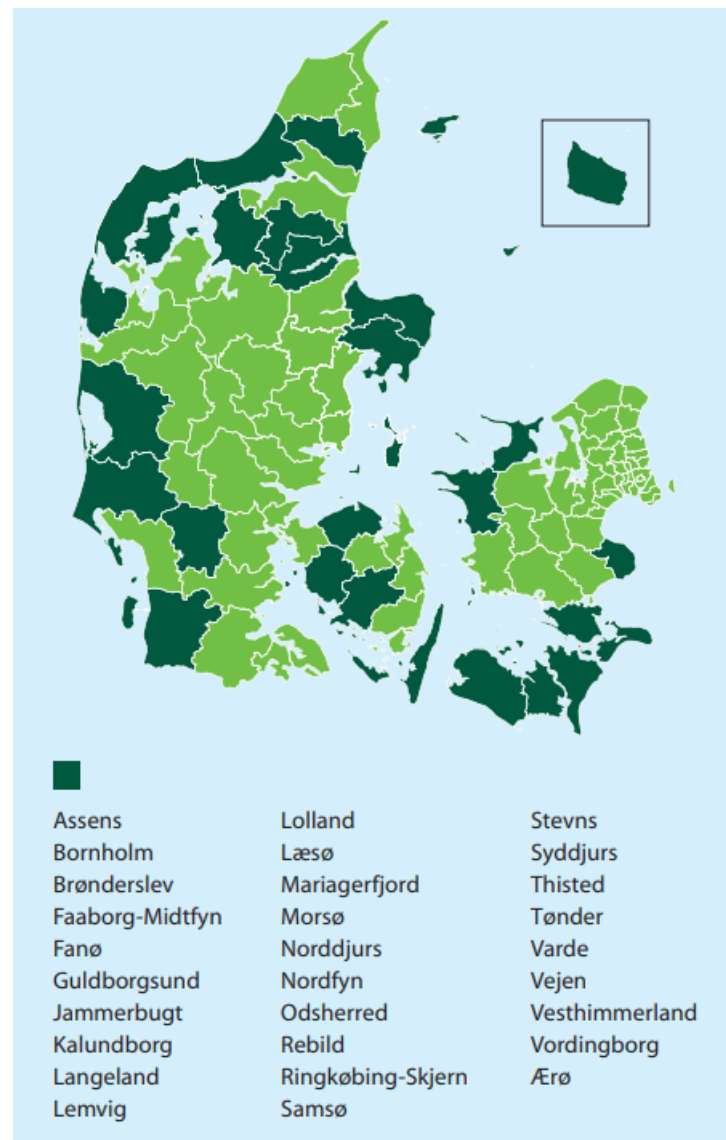
While the 15-Minute City concept is primarily designed for urban areas [C40 Cities Climate Leadership Group, 2021], its underlying principles of sustainability, community engagement, and access to essential services can serve as a source of inspiration for rural development initiatives in Denmark and other countries with rural regions. The goal is to make rural areas more self-sufficient,

economically viable, and attractive places to live, work, and thrive. Citizens in rural areas are far more dependent on transportation in order to access different services and functions. While citizens in many urban areas can reach many services within a reasonable time frame, rural communities might not be able to at times.

## **1.1 Rural Denmark**

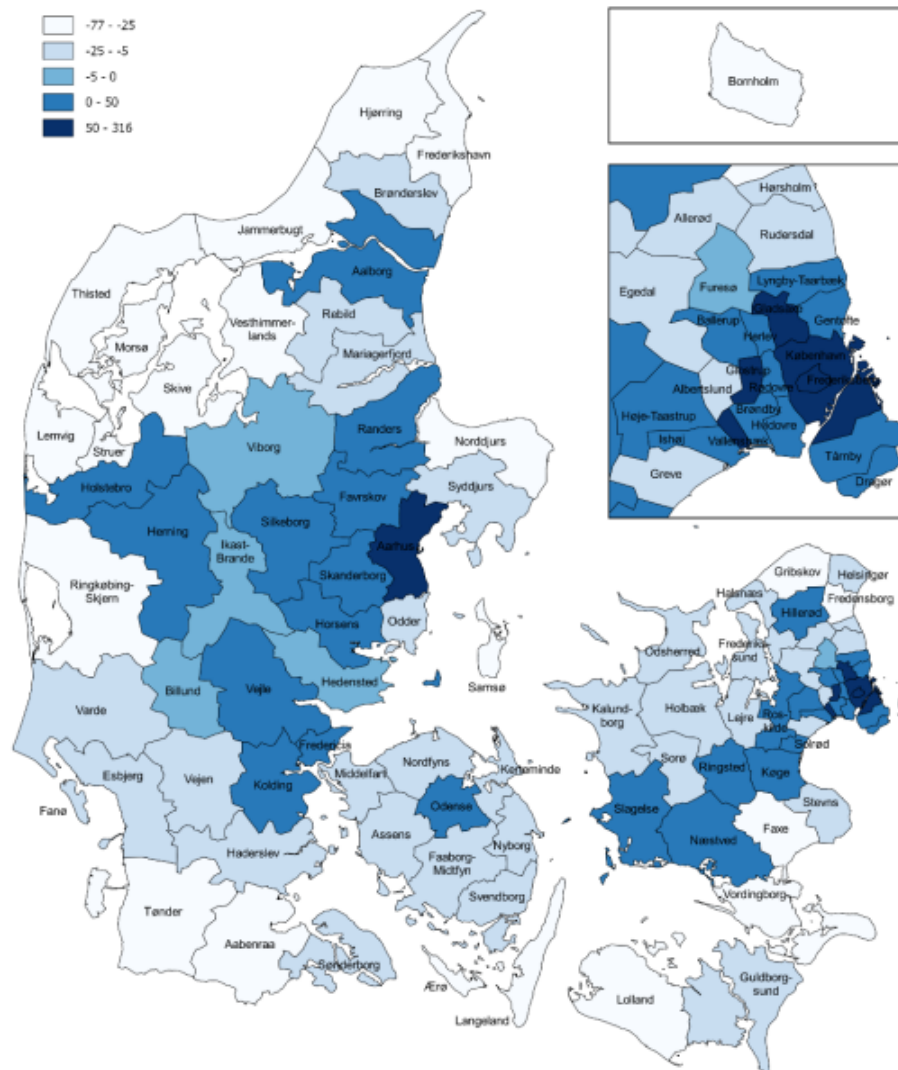
The country of Denmark is divided into urban and rural areas according to Regeringen [2010]. In the 1840s, Denmark experienced urbanization, during which people migrated to larger cities, abandoning rural areas in pursuit of employment. This resulted in an imbalanced Denmark, with rural areas becoming desolate while urban cities thrived in terms of work opportunities, universities, shops, culture, health services, and more [Regeringen, 2010]. The financial crisis in the early 2000s exacerbated the challenges for rural Denmark, with many workplaces, especially in the industrial sector employing citizens in rural areas, shutting down [Regeringen, 2010].

The inhabitants of these rural areas are predominantly elderly compared to the younger population in large cities, partly due to educational institutions in cities attracting young students [Regeringen, 2010]. In 2010, the Danish government introduced a plan to address the urban-rural divide and promote equality throughout Denmark. Alongside this plan, the government released an illustration depicting rural municipalities (see illustration 1.1). These rural municipalities vary in characteristics depending on the aspect of rurality being considered.



**Figure 1.1.** Rural municipalities depicted on a map of Denmark with the dark green municipalities being considered rural [Regeringen, 2010].

The illustration indicates that the western part of Denmark (Vestjylland) along with parts of Northern Denmark (Nordjylland) is considered rural and is colloquially referred to as "the Rotten Banana" ("Den Rådne Banan") due to its banana-like shape [Regeringen, 2010]. Furthermore, the so-called Rotten Banana is also the municipality with the most significant population decline according to a study by Kommunernes Landsforening [2018]. The analysis describes how, since the financial crisis of 2008, rural areas in Denmark have become increasingly desolate, with urban cities attracting many residents from rural villages [Kommunernes Landsforening, 2018].



**Figure 1.2.** Map depicting the changes of population in Danish municipalities in the year of 2018 [Kommunernes Landsforening, 2018].

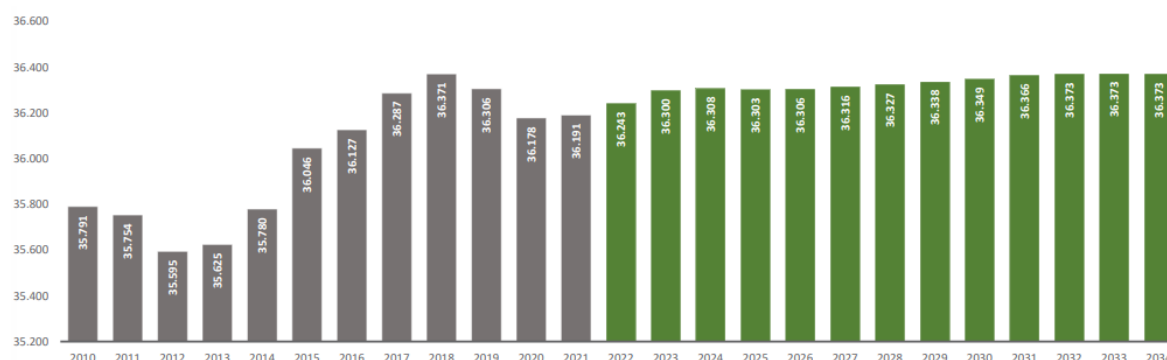
A study by [Kommunernes Landsforening, 2021] reveals that a quarter of every Dane continues to reside in their childhood municipality from ages 15 to 35. Of those born in 1986, 14% have spent at least two years outside their childhood municipality and have since returned. The analysis also notes a decline in individuals in their mid-30s living in their childhood municipality, partly attributed to many students relocating to larger municipalities for educational purposes [Kommunernes Landsforening, 2021]. This trend of younger citizens moving from smaller, rural municipalities to larger, urban ones has been well-documented for many years [Kommunernes Landsforening, 2018], [Kommunernes Landsforening, 2021]. Numerous municipalities are actively working to counteract this population decline, and one such example is Brønderslev in Northern Jutland.

## 1.2 Brønderslev Municipality

In 2007, Denmark underwent a municipal reform, consolidating the country's municipalities from 271 to 98. In Northern Jutland, Brønderslev Municipality merged with the Municipality of Dronninglund,

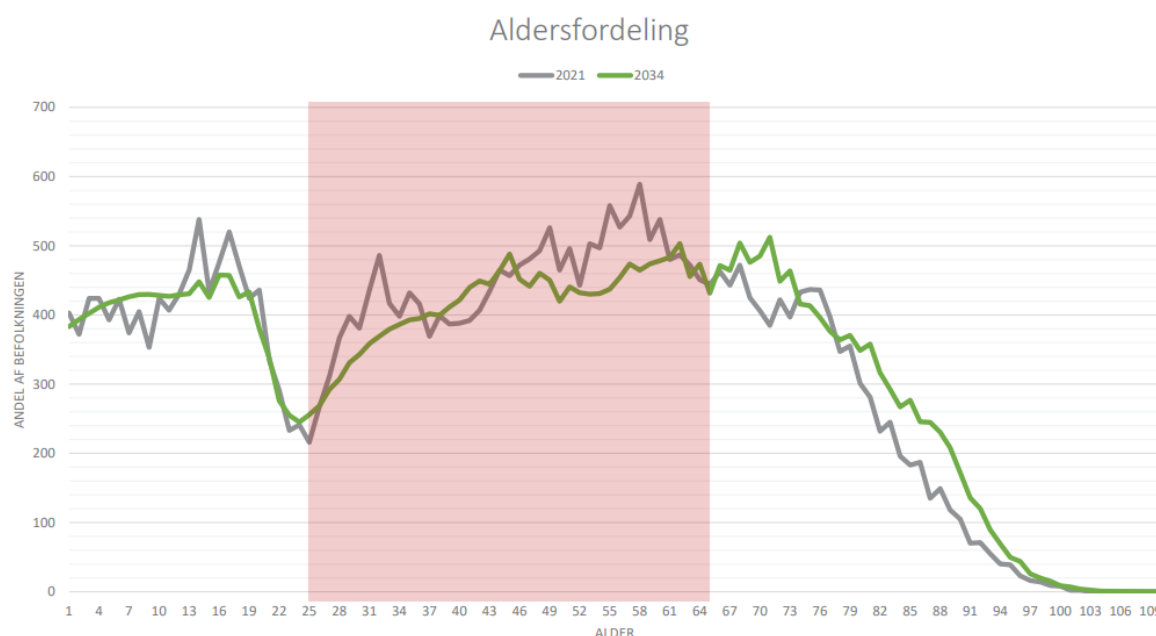
forming the new Brønderslev Municipality. Since the merger, the population of this municipality has gradually increased, reaching a peak of 31,371 citizens in 2018 [Brønderslev Kommune, 2022].

Despite the merger, the population of Brønderslev Municipality is expected to stabilize at an average of 36,300 citizens [Brønderslev Kommune, 2022]. Table 1.3 illustrates the population's prognosis and its development over the last decade.



**Figure 1.3.** Prognosis for population development of Brønderslev Municipality [Brønderslev Kommune, 2022]

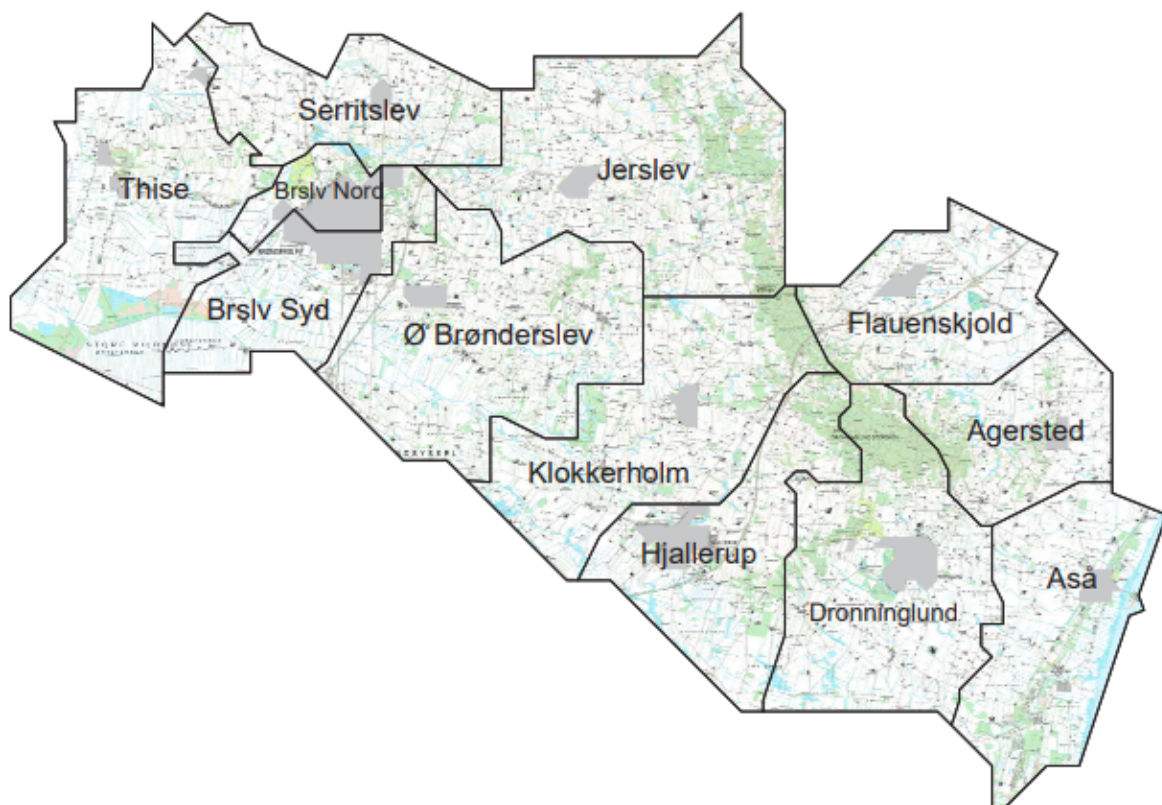
The age distribution of the citizens in Brønderslev Municipality shows that the largest age group is the 25-65 years old, and that the municipality predicts the age group of +65 years old will increase in the future. This is a concern for the municipality [Brønderslev Kommune, 2022]. Figure 1.4 depicts the distribution of age in Brønderslev. The red section of the figure highlights the age group with the largest decline - which is also the group that is of working age and as such contributes to the municipality's economy.



**Figure 1.4.** Prognosis for population development of Brønderslev Municipality distributed by age. The green line represents the prognosis for 2034 while the grey line shows the age distribution of Brønderslev Municipality in 2021 [Brønderslev Kommune, 2022].

This decline can prove to be of significant importance for the municipality which is why the Brønderslev Municipality has allocated several resources to attract new inhabitants to the municipality [Brønderslev Kommune, 2015].

In 2015 the Municipal Council declared its new policy to develop their rural villages in order to create more attractive and livable rural areas. This meant that the municipality each year offers assistance to a village and its local council or a group of local volunteers in order to develop the village. This assistance is financial and resources in form of municipal planners and landscapers [Brønderslev Kommune, 2015]. The policy is a tool the municipality has implemented to reverse the decline in inhabitants. The municipality's own population prognosis also shows that four of its 12 districts are responsible for any potential increase of inhabitants. The districts are illustrated in 1.5.



**Figure 1.5.** The Brønderslev Municipality with its districts. The municipality's own prognosis shows that only four of the districts have an increase of citizens [Brønderslev Kommune, 2022]

The four districts are; Brønderslev Nord (Brslv. Nord) with an expected increase in the age-group of +80 year-old, Brønderslev Syd (Brslv. Syd) with an increase of +65 year-old, Hjallerup with an increase of +80 year-old, and lastly Dronninglund with an increase among the 6-16 year-old and the elderly. The remaining districts will all experience a decline in mainly the younger age groups. The municipality suggests an explanation for this is that the younger citizens move to larger cities and municipalities to study and often times they do not return when they are done studying. This age-group is also creating families, and they make up the working body of the municipalities [Brønderslev Kommune, 2022].



### 1.2.1 Development of Districts in Brønderslev

The development of the districts and the 13 largest villages of Brønderslev Municipality shows that among the seven of the largest villages, only Asaa is in population decline while the others have a slight increase between 2021 and 2023 (see figure 1.6) [Danmarks Statistik, 2023] and [Brønderslev Kommune, 2022].

Nr	Town Name	Inhabitants (2021)	Inhabitants (2023)
1	Brønderslev	12.522	12.884
2	Hjallerup	4.192	4.385
3	Dronninglund	3.435	3.546
4	Asaa	1.123	1.099
5	Øster Brønderslev	924	960
6	Klokkerholm	890	897
7	Jerslev	870	868
8	Flauenskjold	669	658
9	Agersted	562	539
10	Serritslev	500	475
11	Hallund	289	281
12	Stenum	277	258
13	Thise	235	245

**Figure 1.6.** The table shows the Brønderslev Municipality's 13 largest villages and the villages' inhabitants in the years 2021 and 2023 [Brønderslev Kommune, 2022] and [Danmarks Statistik, 2023].

With the municipality's effort to develop its villages, it has initiated and taken several actions through the years. As mentioned in section 1.2, the Brønderslev Municipality has applied for and received funding to develop several villages with physical initiatives. One of their recent attempts to develop a village is in Asaa. In 2021, Brønderslev Municipality published their plan for local regeneration called "Asaa Områdefornyelse" and a comprehensive plan called "En Helstøbt Havneby - Asaa 2025 Helhedsplan". With these publications, the municipality took a large step to develop the old seaport village of Asaa [Brønderslev Kommune, 2021 - 2022] and [Brønderslev Kommune, 2021].

## 1.3 Problem Statement

Brønderslev Municipality seeks to develop the rural small village of Asaa in order to halt and reverse the population's decline and to attract new, young families to the village. In 2021, Brønderslev Municipality published their comprehensive plan for the development of Asaa. This is the first public step of many which the Municipality has taken to attract new citizens to its municipality. But how can the development of Asaa become sustainable and environmentally conscious? At a time where the public is very conscious of its environmental footprint and sustainability, this project of developing Asaa can become sustainable as well. It is therefore the researcher's object to investigate how the 15-minute cities concepts can be implemented in a small, rural village like Asaa despite the concepts originating from large cities.

Therefore, the following research question has been formulated:

***How can the concept of 15-minute cities inspire the development of the rural village of Asaa in Northern Jutland and as a way to attract new citizens to the village?***

To answer the research question three sub-questions have been asked.

*Sub question 1: What are the concepts of the 15-Minute City?*

*Sub question 2: Which parts of the 15-Minute City concepts does Asaa meet?*

*Sub question 3: In which capacity is the 15-Minute City concept applicable in the rural village of Asaa?*

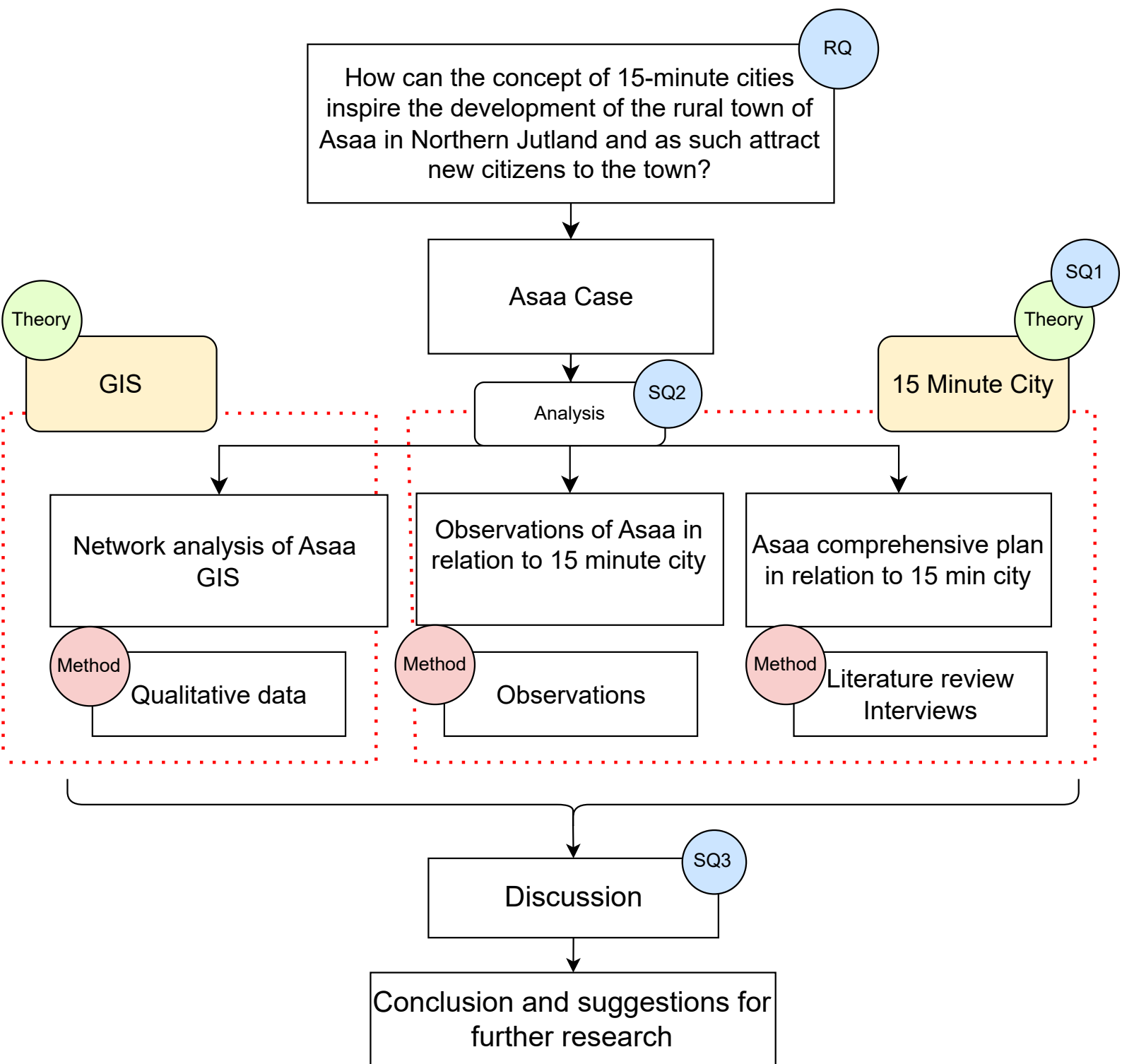
The first sub-question aims to explain the concepts of the 15-Minute City, and will be answered in chapter 3.

The second sub-question will attempt to relate the 15-Minute City concept to the rural village of Asaa and the ongoing urban development of Asaa.

The last sub-question will be discussed in chapter 5 by using the findings in chapter 4 and the theory in chapter 3.

To answer the research question and the sub-questions, the following methods will be applied: Interviews, literature analysis, observations, and GIS network analysis.

The following page illustrates the research design for this project.





# Methods and Methodology 2

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This chapter outlines the methodology employed in the research of this project to investigate the feasibility of implementing the 15-minute city paradigm in rural villages in Northern Jutland. The chosen methodology is a multi-faceted approach which combines several methods: observations, semi-structured interviews with experts, document analysis, a comprehensive literature study, and a network analysis using GIS. The combination of these methods aims to provide a holistic understanding of the theoretical and practical aspects of the 15-minute city model. This chapter will also outline how these methods were applied in the report and why the choices of the researcher.

## 2.1 Method of Reasoning

The process of making predictions, explanations and conclusions based on gained knowledge is called reasoning. Often, one of three methods of reasoning is applied depending on the approach and goal of the research. These methods are called *deductive*, *inductive* and *abductive*.

The **deductive** method seeks to apply existing theories to form a hypothesis, of which empirical studies are conducted [Plowright, 2015]. The deductive reasoning is understood to assert certain rules or principles (a theory) from which a guaranteed outcome is achieved. On the opposite side is the **inductive** reasoning where the empirical study creates a theory [Plowright, 2015]. It is therefore understood that the observations of the inductive method may create a generalized outcome based on the accumulated evidence. The third method, **abductive** reasoning, sets itself apart from the deductive and inductive due to the researcher's speculations or surprise [Plowright, 2015]. It is understood that unlike deductive reasoning, which aims to guarantee the truth of conclusion based on the truth of premises such as the theory, and the inductive reasoning, which aims to make generalizations based on a series of observed instances, the abductive reasoning is about generating the most likely explanation or hypothesis for a set of observations [Plowright, 2015]. Abductive reasoning involved a level of creativity and intuition as it often requires making educated guesses based on incomplete information. While it does not guarantee absolute certainty, abductive reasoning is valuable for generating hypotheses and for guiding further investigations [Plowright, 2015].

The following figure 2.1 illustrates the progress over time of inquiry of the three methods of reasoning.

<b>Inferential logic</b>		<i>Progress over time of inquiry</i>			
Abduction	:	Consequent result	→	Rule or principle	→ Antecedent case
Deduction	:	Rule or principle	→	Antecedent case	→ Consequent result
Induction	:	Antecedent case	→	Consequent result	→ Rule or principle

**Figure 2.1.** This illustrates the inferential logic as progressing over time of the inquiry for the deductive, inductive and abductive methods of reasoning inspired by Plowright [2015].

### 2.1.1 Method of reasoning for this thesis

In the this project, a theory was studied, and an understanding of it was formed in relation to the village of Asaa. Subsequently, empirical data was collected and linked to the 15-Minute City concept/theory, after which a hypothesis was formulated. This hypothesis was then tested against the theory and the empirical data: while conducting research, the hypothesis was adjusted to align with the empirical findings [Plowright, 2015].

The gathering of evidence and the understanding of the evidence and theory in relation to the village of Asaa reflects the abductive process of forming the best possible explanation based on the information available. Relating real life findings, such as observations and interviews, to theories and incorporating them into the analysis also relates to the abductive reasoning. Testing and adjusting the hypothesis against both the theory and the empirical data, along with the iterative adjustment, reflects the abductive method's flexibility in response to new information.

## 2.2 Observation

To gain knowledge of the village Asaa, the different leisure and recreational activities, and its citizens, several observations were conducted. Drawing inspiration from Yin [2018] advocacy for case study research, the study conducted an on-site visit to Asaa to find examples of 15-minute city concepts and potential for the implementation of the 15-Minute City. The researcher drove and walked aimlessly about in the village and observed the different shops and recreational activities available to the inhabitants. Observations are used as a descriptive representation of a phenomenon or an area and serve as a foundation for understanding the practical implications of the model and identifying challenges and opportunities [Kristiansen and Krogstrup, 2015]. Yin [2018] emphasizes the value of observational data in providing a realistic context to align the goal of the 15-minute concept with practice. Observations are usually used to gain a description of a phenomenon. The observations made in Asaa were conducted in order to gain first hand understanding of the village that could not be gained by interviews or literature reviews. The observations were conducted by walking in the village in the afternoon - a time where the inhabitants of Asaa were returning from work. The observer walked from the locations mentioned in chapter 4. This was in part done to see in there were any



pathways not listed in the data from Dataforsyningen - Styrelsen for Dataforsyning og Infrastruktur [2023]. Moreover, the observations were made after the interviews with Jensen [2023] and Mortensen [2023] to draw a line between what they said about the village and the observers own observations.

## 2.3 Interview

Besides the observations, two types of interviews were conducted during the research period: Semi structured interview and a semi structured qualitative expert interview. The first interview was conducted with the chairman of the Jernstøberi of Asaa, and the second was conducted with Urban Planner at the Municipality of Brønderslev, Line Toft Jensen. The semi-structured interview was chosen because it aims to focus on a certain topic while the interviewee can answer freely and in detail, to which the interviewer can then ask additional, supplementary questions or in-depth questions to follow up [Gratton and Jones, 201]. In this project, the focus of the interviews was the development of Asaa and the work of both the municipality and the inhabitants of the village. The interviews were composed of open-ended questions that allowed the interviewees to answer to their liking and to introduce knowledge which the interviewer had not thought to ask for [Gratton and Jones, 201].

Before conducting an interview, there are ethical considerations to be taken by the interviewer, such as informed consent, confidence, consequences, and the role of the interviewer. Informed consent relates to the participant's willingness to participate in the interview [Kvale and Brinkmann, 2009]. The interviewer informed the participants of the purpose of the interview and the background for the project. This led to the interviewee's confidence in how their information would be managed in relation to the thesis - and that the participants would be able to review their information in the context of the thesis [Kvale and Brinkmann, 2009]. A consequence of the interview is that the participants (in this case the planner) reflected on their decisions for the development of Asaa, and possibilities for the development of future villages in the municipality. Lastly, the interviewer's role is very crucial. It is the interviewer's role to keep the conversation relevant to the topic at hand while remaining calm and ensuring the right atmosphere [Kvale and Brinkmann, 2009].

The interview with the Urban Planner at the municipality of Brønderslev was a semi structured interview with an expert informant [Creswell, 2009]. This interview acted mainly as a way of gathering theoretical and practical knowledge and inside information on the municipality's visions for the small village. This interview was conducted as a semi-structured interview because the interviewer did not want to be limited to a list of questions. Moreover, the interviewer wanted the interviewee to lead the conversation, guided by the few questions the interviewer had. It was important that this interview had some clear guidelines prepared beforehand, which is why the interviewer made the interviewee know the theme of the project beforehand. A brief interview guide was made and can be found in appendix A.1 along with a summary.

The interview with Villy Mortensen, the chairman of Jernstøberiet in Asaa was conducted in his home office. The interviewer came in contact with the interviewee through private connections. Beforehand, the interviewee was told about the subject of the project, but a more detailed explanation was given at the start of the interview. The interviewee was asked to introduce himself and Asaa. The interviewer had prepared a series of questions that needed answering, but this was also conducted as a semi-structured interview due to the flexibility of the interview method. By using this method,

the interviewee was allowed to give more information that the interviewer might not have thought to ask for, and the interviewer was able to steer the conversation back to the questions at hand, if the interview steered off track. A summary of this interview can be found in appendix A.2.

## 2.4 Network Analysis

A Geographical Information System (GIS) is a computer-based system which is used to register, model, manipulate, analyze and present geographical referenced data (GeoData) [Chang, 2019]. In general terms it is an IT-tool with which geographic maps can be analyzed to present data. This data could for example be data regarding protected areas (e.g. Natura2000 areas), populations, different zoning (urban, rural) energy data, and much more. GIS allows these types of data to be placed on top of each other on a map [Chang, 2019]. GIS links the given data to a map by combining location data and descriptive data [ESRI, 2023]. GIS allows for the spatial data to be compared and to see how they interact with each other in the given setting.

In GIS, there are two main types of data: vector and raster data [Chang, 2019]. These types of data remain separate. Vector data creates spatial features by points, polygons and lines by projecting them in a X- and Y-coordinate system [ESRI, 2023]. These vector data can then be used as input in an analysis [Chang, 2019]. An example of such analysis could be an analysis of so called "Buffer Zones" where the buffers could be considered the distance from a point to a certain space or a protected area, this could be protected habitats, wetlands, protected nature, etc. [Chang, 2019]. Raster data is made up of a grid system, where each "pixel" in the grid represents a condition for an area. Raster data is used when wanting to describe an area which cannot be divided into vector data (points, lines or polygons). For example, grasslands have many variations and is dense in cover. A single polygon would be easy to create and would easily cover the whole area, but much of the information about the grasslands would be lost – such as the difference in altitude and color. This is because vectors are not good at presenting values that are not homogeneous [Chang, 2019].

When making a GIS analysis, it is important to know which data is used. An example of this is "buffering" where both vector and raster data models are applied. A vector-based buffering and a raster-based buffering both measure distance between selected features, but because the vector-based buffer operation is measured between points, lines or polygons, the analysis would be more accurate seeing as the raster-based analysis is based on cells [Chang, 2019].

### 2.4.1 GIS Isochrones in Asaa

In chapter 4.2 GIS is used to analyse reachable areas within 15 minutes of walking in the village of Asaa. To do so, the method to analyse the map is called isochrone. This method can replace the "buffer" mentioned in chapter 2.4 which shows a distance in radius. Isochrones refer to lines that connect points with the same travel time or the same distance from a given location [Geographyrealm, 2023]. These lines can help illustrate the areas that can be reached within a given time or distance. In the case of this thesis, the parameter for the analysis will be 15 minutes of walking as per Moreno et al. [2021]'s 15-Minute City concept [Geographyrealm, 2023]. Isochrone maps can offer valuable insights in spatial accessibility and can inform and affect decision-makers. The data used in the analysis is pulled from Dataforsyningen - Styrelsen for Dataforsyning og Infrastruktur [2023] such



as public roads, orto-photos, typographic maps. In the analysis in chapter 4.2, isochrones are used in the map to determine the distance from several specified areas chosen from the comprehensive plan for Asaa [Brønderslev Kommune, 2021 - 2022] and from the interview with Mortensen [2023]. This is done to investigate the reach of pedestrians in a 15-minute distance according to the principles of Moreno et al. [2021].

## **2.5 Literature study and Document Analysis**

A literature study is a comprehensive examination of existing scholarly work, publications and research relevant to a specific topic and research questions. The purpose of the literature study is to give an overview of the current state of knowledge on a particular subject, and to help researchers understand the existing literature's scope, methodologies and gaps. Literature studies are a crucial component of academic research, which provides researchers with a foundation for their work and guides the development of hypotheses, methodologies and interpretations.

This report's literature study was used to gain insight in the existing work of the 15-Minute City concept to learn if it was applicable to a rural town. Moreover, a literature study was conducted to study Brønderslev Municipality's work for rural development.

Document analysis is another research method that involves the systematic examination and interpretation of several documents, texts or records to gain meaningful knowledge and information. This method is commonly used in research disciplines where the researcher seeks to investigate, gain understanding and draw conclusions about a particular phenomenon, context, or topic. The document analysis can involve both quantitative and qualitative approaches depending on the researcher's goal. Document analysis is flexible and can among other be applied in policy analysis, content analysis of media, and qualitative investigations. It allows the researcher to explore existing records and gain valuable insights into the studied topic without direct contact with participants.

In this report, document analysis is used to gain insight in the comprehensive plan and the development plan for Asaa. The researcher requested access to the documents by contacting Brønderslev Municipality. These documents are public, but they can only be accessed by requisition. The documents can be found in the external appendix.



This chapter will introduce the 15-Minute City theory and concepts while answering the first sub question of "*What are the concepts of the 15-Minute City?*". This chapter will also lay the foundation for the analysis in chapter 4.

## 3.1 15-Minute Cities

In 2016, Carlos Moreno coined the term and concept "15-Minute City". It covers an urban theory and model for cities that give their citizens access to their daily needs and necessities within 15 minutes of walking or biking. This model and concept has been adopted by several large cities and metropolises around the world. The 15-Minute City concept promotes a decentralized city which ensures all its citizens of all ages, abilities and social backgrounds access to their daily needs such as housing, daily shopping, food, work, cultural institutions, education, after-school activities, and more, within 15 minutes of walking or biking.

According to Moreno et al. [2021], the benefits of the 15-Minute City concept are better health and life quality; due to the less commute time, people have more free time leading to better physical and mental health with active travel. With more commutes being by foot or bike, the air quality in the city will improve. There will be stronger ties to the local community and its green spaces when all essential services are available within 15 minutes of walk/bike.

Because of the 15-Minute City concept, the citizens will have a more environmentally sustainable city with lower transport related emissions. This will also lead to a more equitable city that is inclusive to all its citizens, when all services are located within the 15-minutes vicinity, which creates a city where vulnerable citizens and citizens who cannot afford a car are included.

With all the needed services located nearby, the local economy will be boosted: local and diverse shops with local employment ensures a more productive use of buildings and streets. This will also boost local engagement in nearby shops.

The 15-Minute City does share ideas and concepts with the theories on urban planning such as those of Jane Jacobs, though Jacobs predates Moreno's work on the 15-Minute City, both their theories promote the integration of essential services within a short walking or biking distance near residential areas [Hirth et al., 2012]. Jane Jacobs is believed to have laid the foundation for a more people centered approach to urban planning such as the 15-Minute City concept: the commitment to create livable and sustainable urban environments that prioritize the well being of citizens and the communities [Hirth et al., 2012].

The 15-Minute City advocates for a reduced reliance on cars. Jacobs' promotion of walkable

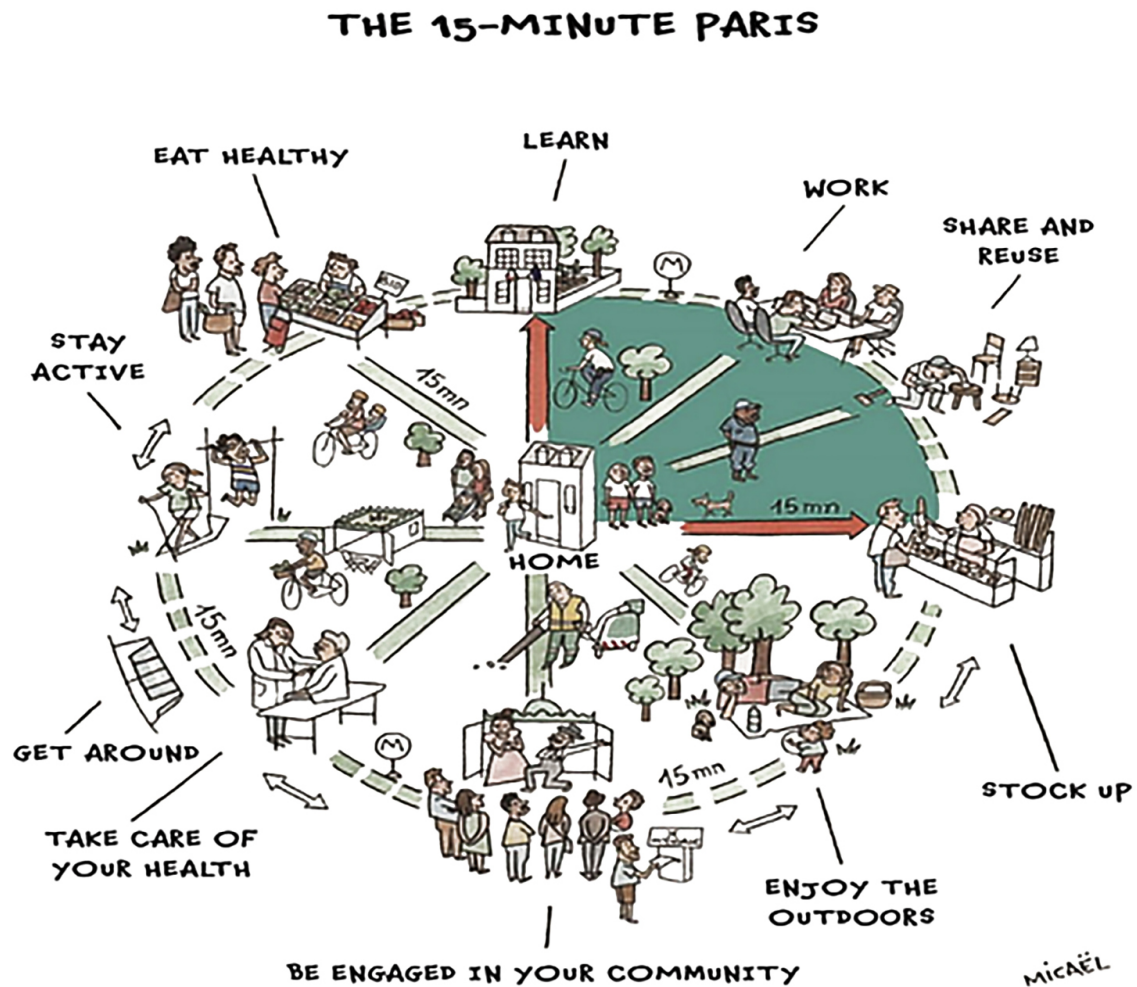
neighborhoods is very similar to Moreno's vision of the sustainable mobility of the 15-minute cities [Hirth et al., 2012].

### **3.1.1 The concepts of the 15-Minute City**

The 15-Minute City theory has several concepts of which a 15-Minute City must fulfil according Moreno et al. [2021] and C40 Cities Climate Leadership Group [2021]:

- **Proximity of Essential Services:** Residents should have easy access to all essential services such as health care, grocery stores, education, workplaces and recreational activities.
- **Mixed-Use Urban Planning:** With mixed use zoning, different functions are integrated in the same neighborhood. This creates multi-functional areas and reduces the need for longer commutes.
- **Enhanced Public Spaces:** Moreno et al. [2021] emphasizes the importance of a well-designed public space, such as parks, in a 15-Minute City. These spaces must be communal and intended for social interaction, recreational and cultural activities.
- **Sustainable Mobility:** The 15-Minute City model encourages sustainable modes of transportation such as walking, biking and public transport. By reducing the reliance on private vehicles, the 15-minute concept aims to reduce traffic congestion and pollution.
- **Local Economic Development:** When implementing the 15-Minute City concept, local business will thrive by fostering diverse businesses and enterprises.
- **Community Engagement:** A very crucial aspect of the 15-Minute City is community engagement. By encouraging residents to participate in developing their neighborhoods by providing input on urban planning decisions, the residents contribute to the overall well-being of the community.
- **Digital Technologies:** Smart urban solutions can be integrated in the 15-Minute City concept with solutions that enhance connectivity, efficiency and accessibility. This can include digital platforms for real-time information sharing, smart infrastructure.
- **Adaptability to Local Contexts:** Lastly, the 15-Minute City concept is adaptable to diverse urban context and can be implemented on various scales from metropolis to smaller village and neighborhoods.

The 15-Minute City concept is illustrated in figure 3.1.



**Figure 3.1.** The picture illustrates the 15-Minute City concept illustrated by Micael Fresque "What is a 15-minutes city?" | CiTea (ci-tea.com)

Moreno et al. [2021] claims that the benefits of the 15-Minute City are many. The reduced environmental impact through the decreased reliance on cars and the healthier lifestyle through increased physical activity. It can also impact the local businesses, cultural activities, urban development and the local communities in a positive manner [C40 Cities Climate Leadership Group, 2021].

However, there are also challenges to the 15-Minute City concept. The greatest might be adapting to the 15-Minute City model. The implementation of the 15-Minute City in an already established city or village may pose challenges with current infrastructure and the mindset of the local community. Balancing the needs of the community can also become a challenge - the community can be diverse with many different needs and values. The resistance to changes in urban planning and the current transportation infrastructure and systems is also a challenge which planners must overcome.

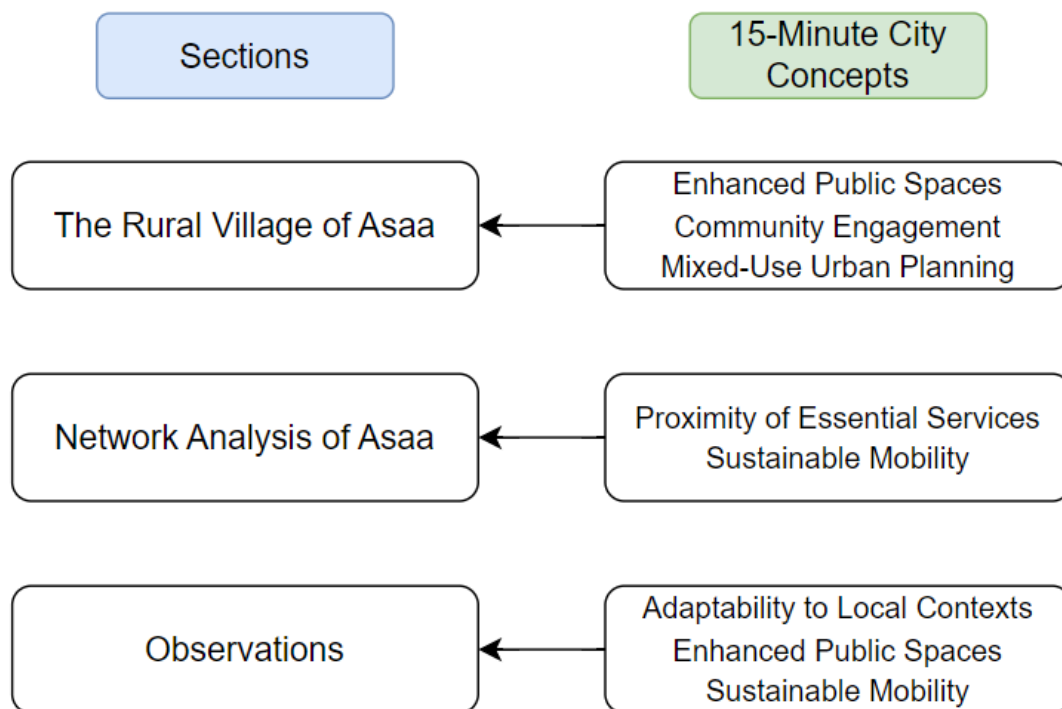
### 3.1.2 Delimitation of 15-Minute City Concept

The 15-Minute City aims to create a well-established, well-functioning, connected and sustainable city. It is Moreno et al. [2021]’s vision that all the concepts or pillars of the theory are connected: strong community engagement will lead to local economic development. For there to be a strong community engagement, the locals must have well established public spaces in which they can engage and feel a sense of ownership.

The following analysis in chapter 4 will focus on several of the 15-Minute City concepts, but mainly the proximity of essential services, community engagement, the adaptability to local context, enhanced public services and local economic development. This is mainly due to the nature of the commenced urban development of the village in cooperation with the Municipality of Brønderslev.

## 3.2 Model of analysis

The graphic in 3.2 illustrates the model of analysis for this thesis. The analysis will be based of some of the 15-Minute City concepts or factors related to the urban development of the rural village of Asaa in Northern Jutland. While smart cities in Asaa can have a positive impact, the author of this thesis has chosen to leave it out of the project.



**Figure 3.2.** The analysis in chapter 4 will use several concepts from Moreno et al. [2021]’s 15-Minute City in the different sections.



Asaa Havn



# Analysis 4

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In this chapter, the rural village of Asaa will be investigated in relation to the concepts of the 15-Minute City. Several relevant actors will be interviewed for their view in the possible development of Asaa and their visions for the village. Moreover, a network analysis of Asaa will be conducted to determine the possibility of implementing the concepts of the 15-Minute City in Asaa.

In section 4.2, the rural village of Asaa will be analyzed using the geographic information system (GIS) in relation to the concepts listed in chapter 3 subsection 3.1.1.

## 4.1 The rural village of Asaa

In the eastern most part of Brønderslev Municipality, the small village of Asaa can be found. Asaa is a popular tourist village for camping, sailing enthusiasts, and holiday homeowners (sommerhusejere). Asaa lies right at the coast of the Kattegat, near authentic protected nature, beaches and farmland. The small village has about 1.100 inhabitants as of 2023 and is the fourth largest village in Brønderslev Municipality [Brønderslev Kommune, 2022]. Asaa has, as many other small villages, felt the effect of urbanization, new occupational structure, the aging demographic [Brønderslev Kommune, 2021 - 2022]. This has led to a population decline through the last 13 years - from 1209 inhabitants in 2008 to 1099 inhabitants in 2023. The village of Asaa is therefore facing a necessary readjustment or development if the small village is to avoid any further decline in the population [Brønderslev Kommune, 2021 - 2022]. Brønderslev Municipality declares in their comprehensive plan for Asaa that the development must focus on attracting families that want to live near nature and the sea, away from the busy urban villages [Brønderslev Kommune, 2021 - 2022]. The rural village of Asaa offers many activities for its inhabitants such as after-school activities and events at the harbor and the local community center in the old iron foundry [Fonden Jernstøberiet, 2022], [Asaa Borgerforeninger, 2022].

Asaa is known for its very active local council is led by volunteerism from the inhabitants of the village. In 2022, Asaa was awarded Village of the Year due to the village's strong community and the local council's focus on loneliness and strengthening community [Landdistrikternes Fællesråd, 2022]. The center of Asaa is currently being developed in cooperation with the Brønderslev Municipality and the local community of Asaa by using the funds of the "Landsbyprojektet" [Brønderslev Kommune, 2015].

In order for Asaa to participate in the development project and to receive the funds, the project had to involve "Bottom-Up" planning in which the inhabitants of Asaa lead the project.

"Bottom-Up" planning is the process in the planning initiatives originate from a local community or



grass-root level. There is an emphasis on community participation and involvement in the decision-making. In the "Top-Down" process, the planning decisions and directives are initiated and imposed from higher levels, such as authorities, bodies of government, or planning professionals [Yin, 2018].

According to Jensen [2023], the planning and the development of Asaa has been heavily influenced by the citizens of Asaa - especially the local citizen council. The chairman of the cultural center in Asaa, Villy Mortensen, who is also a member of the local council in Asaa, has participated in several steering group meetings facilitated by Brønderslev Municipality and he is also actively participating in the future planning and implementation of the comprehensive plan Brønderslev Kommune [2021 - 2022] and the district renewal Brønderslev Kommune [2021]. In an interview with Mortensen [2023] explained, that the Brønderslev Municipality decided to develop Asaa because they saw the great potential of the village; Asaa already has an active local community, its position between larger cities in Northern Jutland, the harbor, the work of the local council and the close knit community made it an obvious choice for district planning [Mortensen, 2023].

Mortensen [2023] explained how a steering group was established and made to cooperate with the Brønderslev Municipality and several architects and engineers to share ideas and create plans for the development of Asaa. The steering group narrowed down the focus areas to three main areas of Asaa: Stjernepladsen, Jernstøberiet, Asaa Harbor. Moreover, the steering group decided on the overall vision of the village; to create a sustainable village and to attract new citizens while maintaining the current villagers [Mortensen, 2023]. The first time the steering group met with the municipality and the architects, they walked around the village to create an overview of the village and its potentials [Brønderslev Kommune, 2021]. Moreover, during the walk the steering group and the architects made several observations of locations of significance - local, cultural and historical significance [Brønderslev Kommune, 2021], [Mortensen, 2023].

The following locations were marked as focus points for the development of Asaa:

1. Ankomstpladsen (Arrival Square)
2. Stjernepladsen (Star Square)
3. Jernstøberiet
4. Auktionshuset (Auction House at the harbor)
5. Sandflugtsbænken (Art installation and bench at the harbor)

Moreover, the local shops (artistic and grocery shop), the school, recreational activities and museum were also chosen as focalpoints for the development of Asaa. Chapter 4.2 will be based on these areas.

As Moreno et al. [2021] 15-Minute City concept of "Community Engagement" prescribes, the local community must be engaged in the planning of the development of the urban areas. It has clearly been the case in Asaa with the many citizens having taken an active part of the planning process [Jensen, 2023], [Mortensen, 2023], [Brønderslev Kommune, 2021]. The comprehensive plan for Asaa highlights the community engagement and the potential for future legitimacy and ownership of the end-result. Moreover, the comprehensive plan emphasises the enhanced public spaces as a means for the village to develop in the future. These enhanced public spaces will, according to the comprehensive plan, have multiple purposes: the harbor serves both as a place for fishermen to lay anchor, it has a restaurant for fishermen, inhabitants, and tourists to enjoy [Brønderslev Kommune,

2021 - 2022]. The restaurant at the harbor houses concerts and several events through the year according to Mortensen [2023]. The village square has been named "Velkomstpladsen" (arrival square) and "Stjernepladsen" due to its purpose as the square where all the roads to Asaa lead, and the activity the local council is trying to create at the square [Mortensen, 2023]. Perhaps the location in Asaa with the most multi-use is the Jernstøberi. Mortensen [2023] attached great importance to the building's future status as a cultural hub for Asaa.

## **4.2 Network analysis of Asaa in relation to the 15-Minute City Concept**

In chapter 3, the concepts of the 15-Minute City were clarified, and a selection of them was made based on their suitability for this thesis. To assess Asaa's potential to follow the 15-Minute Concepts, a GIS network analysis (isochrone) was conducted of the roads, footpaths, other routes, and the essential services in the village of Asaa. The essential services were elected after an interview with Mortensen [2023], observations made in the village, and from information gathered in public documents such as the Comprehensive Plan [Brønderslev Kommune, 2021 - 2022] and the Development Plan [Brønderslev Kommune, 2021]. Subsequently, a series of analyses were conducted based on the following premises: a 5-minute walk, a 10-minute walk, and finally, a 15-minute walk in accordance to Moreno et al. [2021] 15-Minute City concept. Due to the size of Asaa, there are limitations on the services provided in the village, but the following have been selected for this GIS analysis:

- The local grocery shop
- The church
- The school (year 1-6)
- The restaurant (Madhåndværk)
- Stjernepladsen/Velkomstpladsen (village square)
- The harbor
- The local doctor
- Football club - and other after school activities

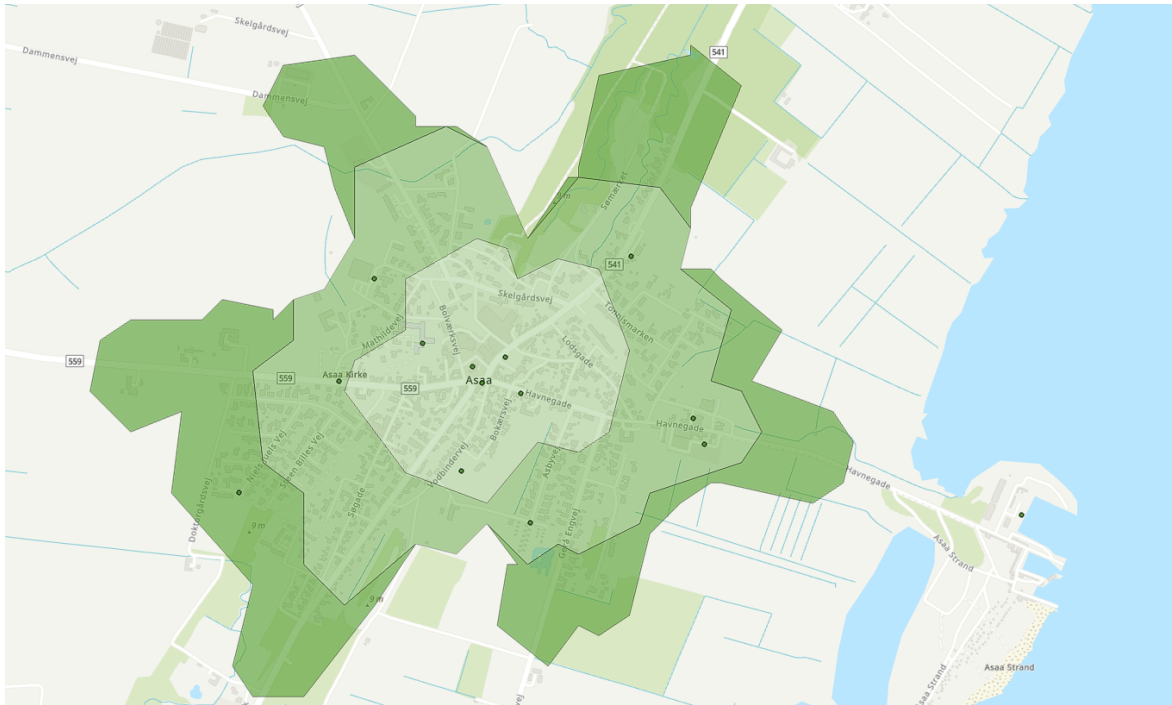
These locations were all placed on a map of Asaa which can be seen on figure 4.1.



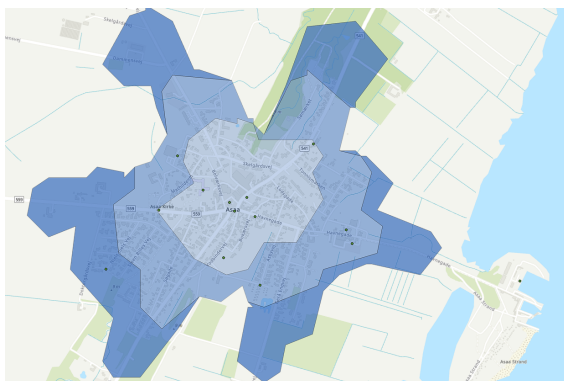
**Figure 4.1.** GIS map of the village of Asaa with dots marking the locations selected as essential services in the community.

Next, all the points were, one by one, analysed in GIS using data collected from Dataforsyningen - Styrelsen for Dataforsyning og Infrastruktur [2023]. The network analysis shows the service area of the routes within the given parameter of respectively 5, 10, and 15-minutes.

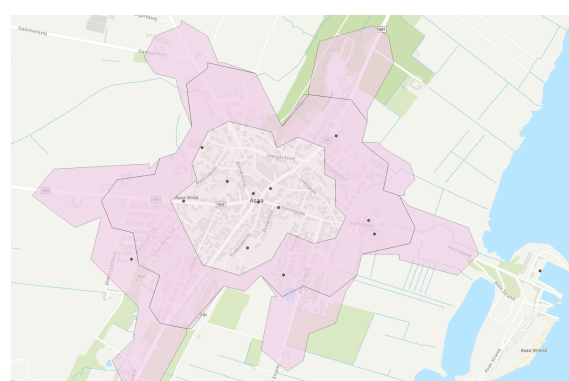
The village square of Asaa has three of the essential services: The grocery store, the restaurant, and Stjernepladsen (village square). As figure 4.3 and figure 4.4 show, the village square can service the majority of Asaa except the harbor.



**Figure 4.2.** Isochrone map with the point of reference being the village square of Asaa.



**Figure 4.3.** Isochrone map of Asaa with the point of reference being the grocery store.

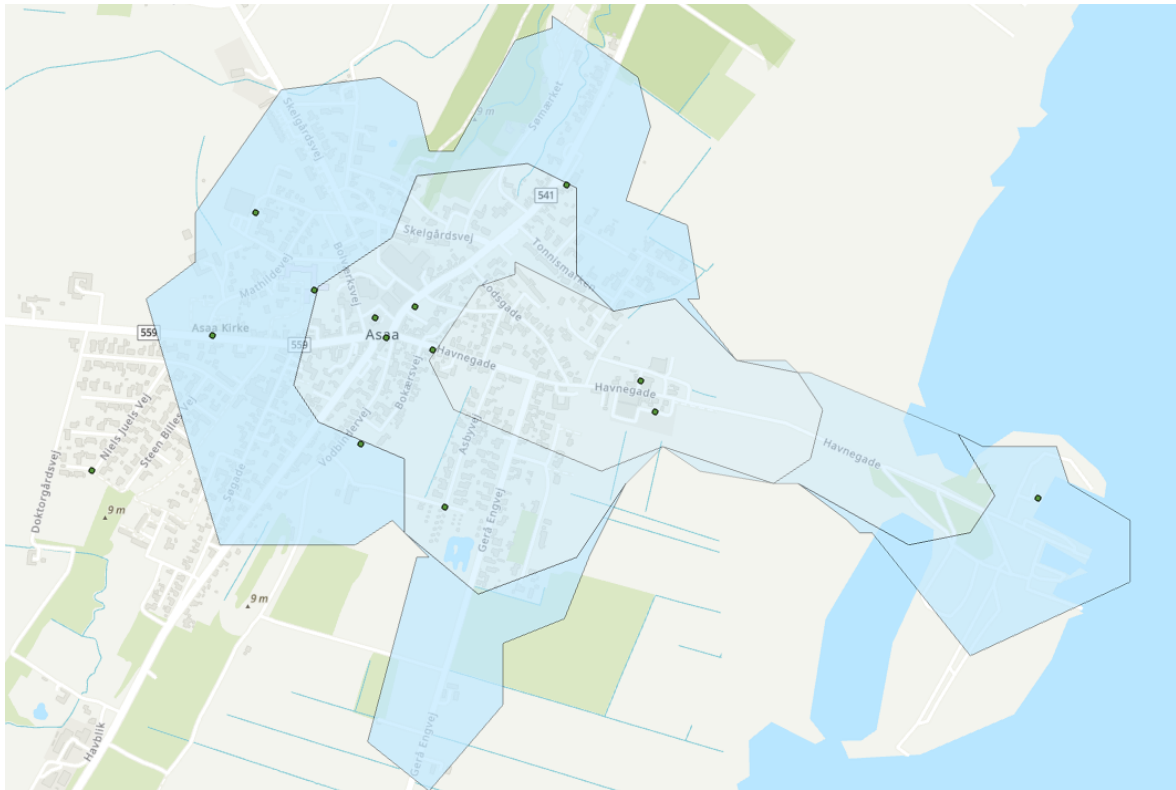


**Figure 4.4.** Isochrone map of Asaa with the point of reference being Madhåndværk - one of the two restaurants in Asaa, located at the village square

The isochrone maps show the distance a pedestrian can reach in 5, 10 and 15-minutes from point of reference.

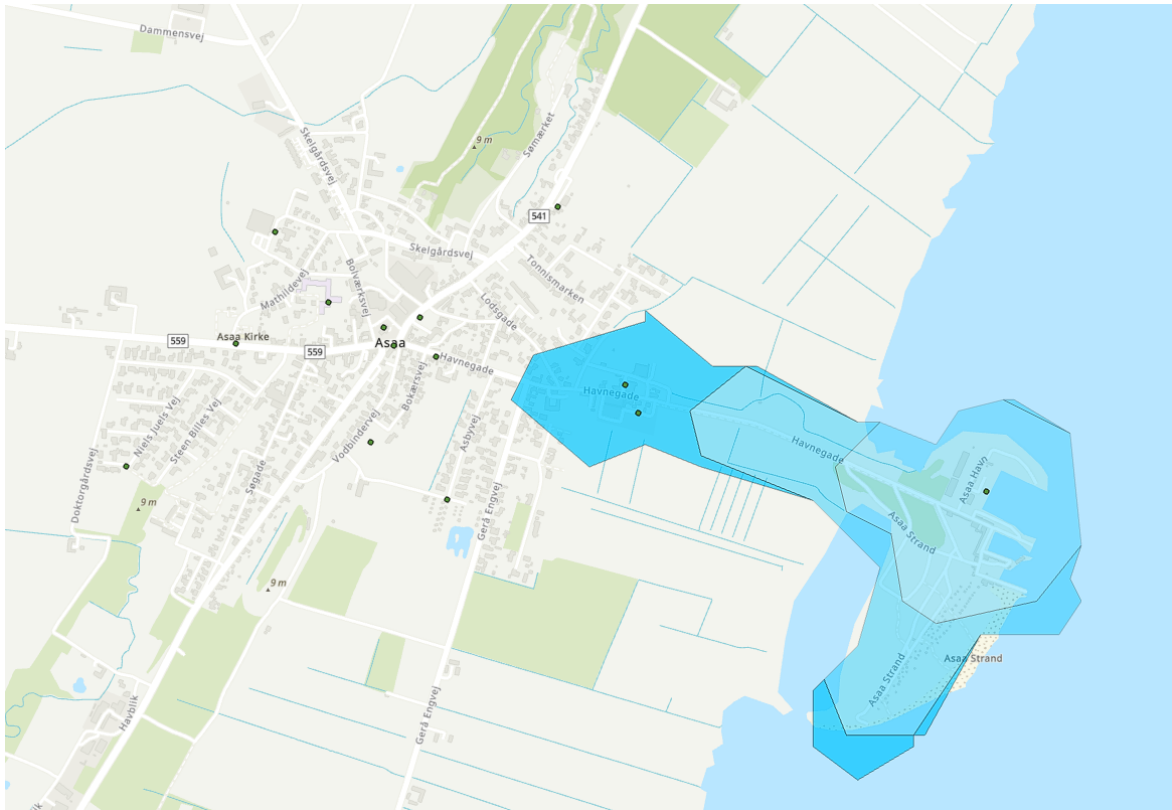
The maps in figure 4.3, 4.4, 4.2 show how the harbor is separated from the village of Asaa, by being outside the 15-minute walking distance from the village square.

When changing the point of reference to Jernstøberiet as seen in figure 4.5, the culture house under renovation, the service area also changes. The Jernstøberi is located between the village square and the harbor, with a very large service area - only the 'lower left' part of Asaa cannot be reached within the 15-minutes prescribed by Moreno et al. [2021], which is a significant part of the residences are outside the service area.



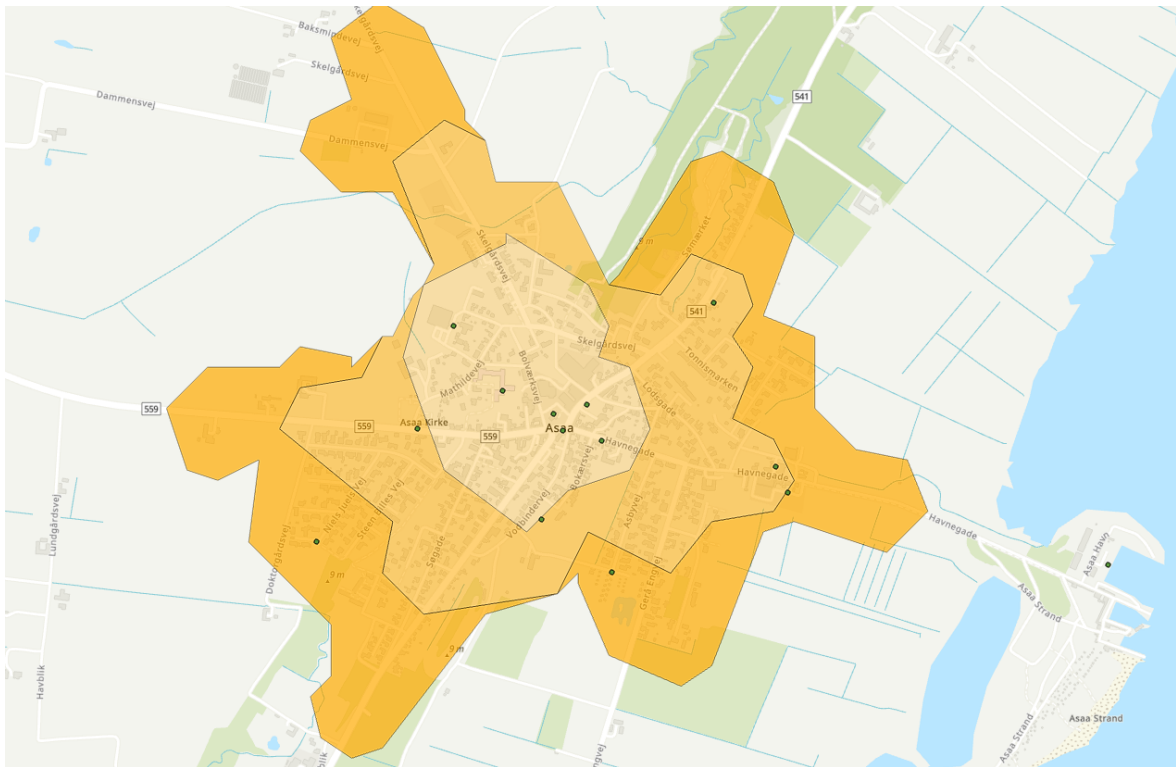
**Figure 4.5.** Isochrone map with the point of reference being the Jernstøberi between the village of Asaa and the harbor.

The isochrone map of the harbor illustrates a slight separation between the harbor and the town. The distance between the harbor and Jernstøberiet is within the 15-minute which Moreno et al. [2021] describes. The map in figure 4.6 shows that the whole harbor is in the 5-minute service area, while the village square is just outside the 15-minute distance.



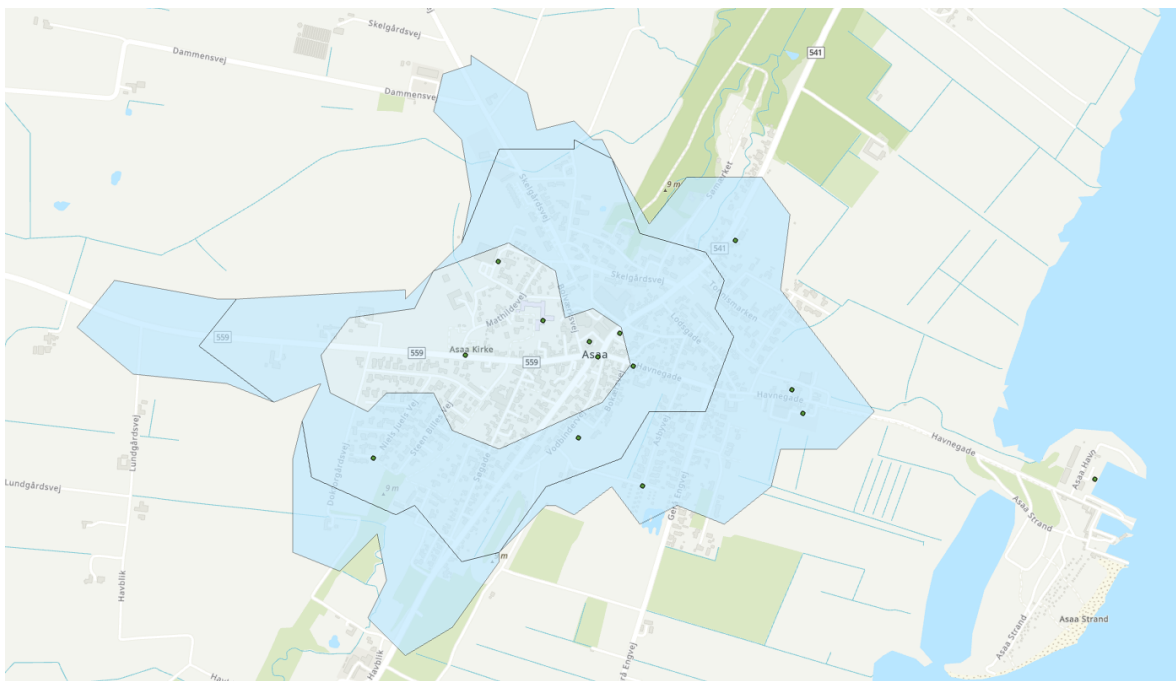
**Figure 4.6.** Isochrone map with the point of reference being the harbor of Asaa.

The local public school offers classes until year 7 (6. klasse) where after the children can attend school in the nearby towns. The isochrone map in figure 4.7 clearly shows how the whole village is covered by the service area.



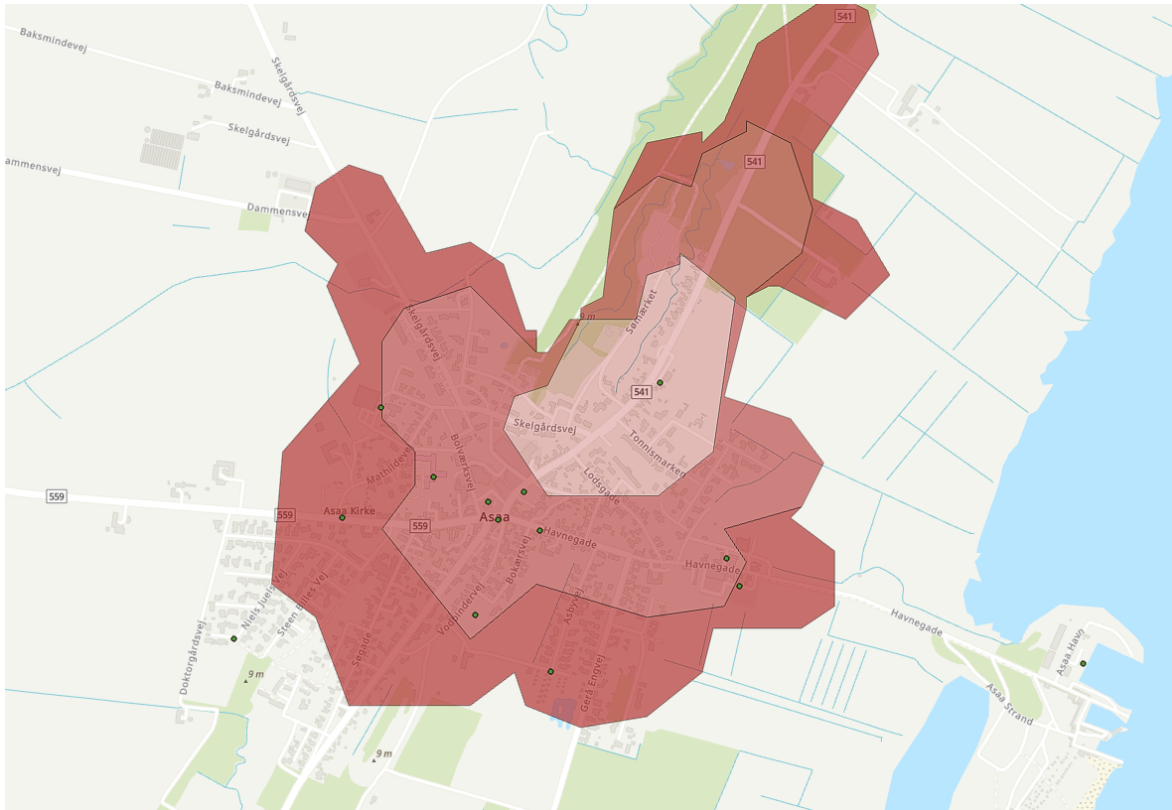
**Figure 4.7.** Isochrone map with the point of reference being the local public school in Asaa.

In front of the church of Asaa, the village has a local general practitioner. This is also a very important essential service for a small village like Asaa [Moreno et al., 2021], [Brønderslev Kommune, 2021 - 2022]. The reach for the practitioner is seen in figure 4.8, which shows that all residential areas in the village can reach the doctor's office (and the church) within a 15-minute walk.



**Figure 4.8.** Isochrone map with the point of reference being the general practitioner and the church in Asaa.





**Figure 4.9.** Isochrone map with the point of reference being the local football fields in Asaa.

Asaa has many recreational activities for its citizens - they have a local soccer field, an infamous horse racing track, small creative clubs, and more [Mortensen, 2023]. The map shown in figure 4.9 illustrates how the football field can be reached within a 15-minute walk by the majority of the village.

While Moreno et al. [2021] concept is called the "15-Minute City", several metropolis have altered the concept to 20-Minutes or more. If that were the case in Asaa, then all the services available in the village can be reached by foot within a reasonable time and distance.



### 4.3 Observations

This section will analyse the village of Asaa using observations of the village, Moreno et al. [2021] 15-Minute City concept, and the isochrone analysis in chapter 4.2. Moreover, the observations were made in order to investigate the adaptability of the 15-Minute City concept to the rural village of Asaa. The observations made in Asaa were made on a Tuesday afternoon in December, where the observer walked the distance between the locations in Asaa mentioned in section 4.1.

The Stjerneplads/Velkomstplads had undergone a development just as described in the comprehensive plan and Jensen [2023] and Mortensen [2023].



**Figure 4.10.** The Velkomstplads/Stjerneplads as seen when arriving in Asaa. Notice the grass and the red building (grocery store) in the background.



**Figure 4.11.** The Velkomstplads/Stjerneplads showing the main road. Notice the grasses on the left. The white building on the left is one of two restaurants.

The Stjerneplads acts as the village square - the center of the village. At the time of observation (Tuesday afternoon), there was a lot of activity surrounding the square, with many shopping at the grocery store.

Right across the square, the restaurant Madhåndværk, which has recently been restored by the owner [Mortensen, 2023]. The other restaurant, Havblik, can be found at the harbor.



**Figure 4.12.** Madhåndværk - one of two restaurants in Asaa. It is located at the Stjerneplads/Velkomstplads.

As the isochrone map 4.2 show, the town square could be reached within 15-minutes from all residential areas. It is also within 15-minutes of the Jernstøberi (fig. 4.5). The Jernstøberi was undergoing renovations at the time of observation.



**Figure 4.13.** Jernstøberiet - the future cultural center of Asaa.

The Jernstøberiet was located right between the village square and the harbor, with a road and a bike-/pedestrian path on the side. This path lead from the harbor to the other side of the village.

Lastly, it was observed how the distance between Asaa village and Asaa Harbor appeared greater by foot than it seemed on map 4.6. In figure 4.14, the harbor has been photographed with a drone - this clearly depicts the distance between the harbor and Asaa, and the road connecting them.



**Figure 4.14.** Asaa Harbor seen by drone. In the background, the village of Asaa can be seen. Notice the road connecting the two [Hans Ravn, 2023]

The area between the harbor and the village is protected by Natura2000, meaning that there cannot be any development in the area, unless the protection is raised or altered [Miljøministeriet, 2023].

## 4.4 Summation

The analysis answers the second sub-question *Which parts of the 15-Minute City concepts does Asaa meet?* The rural village of Asaa does in parts live up to many of the principles in Moreno et al. [2021]'s 15-Minute City concepts. The development of Asaa has on large been bottom-up with the municipality engaging the local council and the inhabitants of Asaa in the planning of the village. Moreover, Mortensen [2023] has made it clear that the village's active volunteers have worked on developing Asaa years before the municipality granted the village funds to develop Asaa further [Brønderslev Kommune, 2015]. The urban development planning of Asaa has included enhanced public spacing with strong community engagement. The public spaces have been developed in cooperation with the local council, and the plans have been adjusted during the process to ensure the legitimacy of the project and the acceptance from the inhabitants of the village.

By analysing the village with the GIS isochrone network analysis using data from Dataforsyningen - Styrelsen for Dataforsyning og Infrastruktur [2023] to locate roads, essential services and mapping their service area on the basis of the distance from the 15-Minute City concept. Only the harbor was clearly outside the 15-minute walking distance. But the village and the harbor are connected by a bike-path, meaning cyclists can reach the harbor in the 15-minutes.

The observations made in Asaa show the potential of Asaa, and they have been made to support the findings in the GIS analysis and the interview with Jensen [2023] and Mortensen [2023].







# Discussion 5

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This chapter will discuss the findings in chapter 4 and answer the sub-question *"In which capacity is the 15-Minute City concept applicable in the rural village of Asaa?"*.

## 5.1 Discussion of Findings in the Rural Village of Asaa

In Chapter 4.1, the 15-Minute City concept was examined in relation to the ongoing urban development in Asaa. The current comprehensive plan for development was collaboratively formulated with the inhabitants of Asaa and their local council. Despite the fact that the 15-Minute City concept was not consciously integrated into the development and plans, Moreno's concepts may still be applicable in the village's future development. Even though Asaa's planning is finalized and in the implementation phase, the 15-Minute City concept can still be considered for the development of other villages, including Asaa.

To align Asaa more closely with Moreno et al. [2021]'s 15-Minute City concept, there is a need for more multi-functional areas and a greater focus on sustainability in the planning process. The village should enhance its appeal to tourists and future residents by developing a distinctive identity that reinforces future urban development efforts. Asaa benefits from a highly active and engaged local community, actively participating in local events, civic associations, and the overall well-being of the village. As mentioned by Jensen [2023] in an interview, if Asaa continues to brand itself in this manner and identifies a niche that attracts new inhabitants and tourists, the urban development of Asaa can achieve greater success. One potential niche is Asaa's vibrant artistic community, presenting the village as a hub contributing to the success and exploration of the arts, potentially attracting new businesses, residents, and tourists.

Moreover, Asaa should explore altering or adjusting the Natura2000 protection between the harbor and the village to enhance their connection. Currently, the harbor appears somewhat isolated. Asaa Harbor holds significant potential as the sole harbor in Brønderslev Municipality, and efforts should be made to integrate it as a valuable asset for the entire area. This could serve as a strategic initiative for the municipality and the local community to attract tourists and increase overall activity in the region.

## 5.2 Discussion of isochrone maps

The maps presented in Chapter 4.2 illustrate that the service area effectively covers Asaa. Moreno et al. [2021]'s (15-Minute City) concept, which advocates for all essential services to be within a 15-minute walking or biking distance, is fulfilled. In situations where inhabitants require services

not available in Asaa, the nearest town is only 10 minutes away by car, 20 minutes by bike, and 10 minutes by public transportation. This implies that residents of Asaa do not need to travel extensively or heavily rely on private vehicles when necessary.

Additionally, the maps in Chapter 4.2 (see Map 4.6) highlight a noticeable distance between the harbor and the city. While this distance slightly deviates from Moreno et al. [2021]’s 15-Minute City concept, the presence of a bike path connecting the harbor and the city ensures that cyclists (and pedestrians) can safely reach the harbor.

The undeveloped area between the village and the harbor benefits from Natura 2000 protection. While this protection can pose challenges to the development of Asaa and the harbor, it also holds potential as an asset. If Asaa positions itself as surrounded by protected nature with unique flora and fauna, it may attract a new clientele interested in visiting the village. Asaa must find a way to encourage harbor guests to stop in the village on their way to and from the harbor. Given Asaa’s size, the majority of daily needs can be met within 15 minutes, excluding work. Furthermore, the nearest town, Dronninglund, is easily accessible, being less than 10 minutes away by car, 15 minutes by bus, and 20 minutes by bike. This ensures that residents have convenient access to essential services without extensive reliance on private vehicles. Additionally, the presence of the protected Natura 2000 area, the harbor, and the beach means that villagers and their guests, including tourists, do not have to travel far to experience protected and untouched nature.

### **5.2.1 Migration pattern and how it affects Asaa**

The chairman of Jernstøberiet, Mortensen [2023], was highly aware of the migration pattern in Brønderslev Municipality and Asaa. He mentioned how elderly citizens in Asaa relocate to larger towns in the vicinity as they age, reaching a point where maintaining their houses becomes challenging, and their need for services like elderly care cannot be met in Asaa. Mortensen [2023] emphasized that their requirement for different housing, in particular, prompts their departure from Asaa. While this claim hasn’t been corroborated by other sources, if true, Asaa could work to retain its elderly citizens by constructing new homes such as semi-detached houses or senior communities, subsequently freeing up houses for young families.

The residents of Asaa and the numerous local civic associations acknowledge this predicament, prompting active efforts to create a welcoming local community with a variety of activities for its inhabitants.

Brønderslev Municipality’s migration pattern indicates a slight reduction in Asaa’s population between 2021 and 2023, while the three largest towns have experienced a minor increase. This suggests a potential trend of citizens moving to larger towns (see Table 1.6). If more essential services are established in Asaa or if access to them becomes more streamlined, there is a possibility that more citizens will choose to move to or stay in Asaa. While the village may not compete in terms of job opportunities, it offers a range of amenities, including a local grocery store, restaurants, and an active local community.

### 5.2.2 The future of sustainable villages

After Covid-19, Danes have become more conscious of their relationship with nature and of their time off at home. More and more people are leaving the larger cities to settle near nature and towns that offer essential services in the vicinity of their homes. Asaa has the potential to become one of these areas. With a comprehensive plan estimated to be fully implemented by 2035, there is an opportunity to adjust the plan continuously. There are several factors in Moreno et al. [2021]’s 15-Minute City concept that can contribute to a stronger local environment - such as smart cities. These smart cities can be senior co-housing/communities that incorporate smart solutions for the benefit of the elderly. These solutions may involve digital health services. It could also be a way for artists, both nationally and internationally, to contribute to the local community through digital/online connections. The artistic community in Asaa could create a artist co-housing of sorts to attract tourists and artists to the town.

## 5.3 Summation

In Chapter 4, the 15-Minute City concept was examined in relation to the ongoing urban development in Asaa. The current comprehensive development plan, created in collaboration with the inhabitants and local council, did not explicitly include the 15-Minute City concept. However, the concepts proposed by Moreno et al. [2021] could still be applicable to the village’s future development. Although Asaa’s planning is in the implementation phase, the 15-Minute City concept can be integrated into the development of other villages, including Asaa. The potential for Asaa to better align with the 15-Minute City concept involves creating multi-functional areas and incorporating sustainability into the planning. The village needs to enhance its appeal to tourists and future residents by developing a distinct identity that strengthens urban development efforts. Asaa’s active local community, engaging in events and civic associations, can contribute to this branding. Leveraging the village’s strong artistic community can attract new businesses, residents, and tourists.

Addressing the Natura2000 protection between the harbor and the village can enhance the connection between them, making Asaa Harbor a significant asset for the entire area. Maps in Chapter 4.2 demonstrate that essential services are well-covered within Asaa, aligning with the 15-Minute City concept. Additionally, the distance between the harbor and the village is mitigated by a bike path, ensuring safe access.

The undeveloped area protected by Natura2000 between the village and the harbor can be both a hindrance and an asset. By branding Asaa as surrounded by protected nature, it may attract a new clientele. The village needs to encourage harbor visitors to stop in Asaa, capitalizing on its size, where most daily needs can be met within 15 minutes.

The migration pattern observed by the chairman of Jernstøberiet, Mortensen [2023], suggests that elderly citizens may move to larger towns due to housing and service needs. To retain elderly citizens, Asaa can consider building new homes, such as semi-detached houses or senior communities. The local community’s awareness of this issue has led to the creation of an inclusive community with various activities.

Brønderslev Municipality’s migration pattern indicates a slight reduction in Asaa’s inhabitants,

potentially due to citizens moving to larger towns. Enhancing essential services in Asaa may encourage residents to stay or attract new ones, despite the limited job opportunities.

Post COVID-19, the trend of people leaving larger cities for areas near nature and essential services presents an opportunity for Asaa. The comprehensive plan, expected to be implemented by 2035, allows for continuous adjustments. Moreno et al. [2021]'s 15-Minute City concept, incorporating smart solutions, can contribute to a vibrant local environment. This includes the potential for senior co-housing with digital health services and opportunities for artists to engage with the community through digital connections, further enhancing Asaa's appeal.





"Mod Hjemve"  
Billedhuset  
Palle Miksa  
2016

# Conclusion 6

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The investigation of this report has aimed to answer the following research question:

*How can the concept of 15-minute cities inspire the development of the rural village of Asaa in Northern Jutland and as a way to attract new citizens to the village?*

To answer this question, several methods have been used: qualitative methods such as literature studies, semi-structured interviews, observations and analyses were utilized. Additionally, GIS network analyses were used to study Asaa and the essential services in the village. As a result of these analyses, a series of isochrone maps were generated, serving as the foundation for the discussion of Asaa and the village's development in accordance with Moreno et al. [2021]'s 15-Minute City concept. The isochrone maps concluded that Asaa largely complies with Moreno et al. [2021]'s principle of access to essential services within 15-minutes of walking or bike riding, with only Asaa Harbor lying beyond a 15-minute walk.

Furthermore, the analysis indicates that the comprehensive plan for Asaa has been developed in a highly bottom-up manner, with various citizen groups from Asaa represented in the planning of, and adjustments to, the development plan.

Several observations were made which reveals that the isochrone maps and the interviews with both Jensen [2023] and Mortensen [2023] align with the physical observations of the village. This combination of qualitative and quantitative methods provides a comprehensive understanding of Asaa's current state and its future development in the contexts of Moreno et al. [2021]'s 15-Minute City concept.

## 6.1 Reflections

The development of Asaa is exciting in relation to rural development, sustainability, and Moreno et al. [2021]'s 15-Minute City concept. If it had been possible, it would have been very interesting to investigate how Asaa could have looked if Moreno et al. [2021]'s principles had been applied when the comprehensive plan was developed. Moreover, the development of Asaa and similar villages is not just about the physical urban development and planning. To create a sustainable city, town or village, environmental consciousness and a healthy population growth of inhabitants is important. It should be viewed as a larger entity with investments in positive publicity and physical infrastructure. While Brønderslev Municipality, along with the government, has invested time and resources in the development of Asaa, the work must not stop at the implementation of the comprehensive plan. The municipality ought to utilize tools such as social media to create positive attention to the rural town.

# Bibliography

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- Asaa Borgerforeninger, 2022.** Asaa Borgerforeninger. *Asaa - Østkystens Perle. Om Asaa.*  
<https://www.asaaborgerforening.dk/>, 2022. Accessed: 07-10-2023.
- Brønderslev Kommune, 2022.** Brønderslev Kommune. *Befolkningsprognose 2022-2034.*  
<https://www.bronderslev.dk/om-kommunen/befolkningsprognose>, 2022.  
Accessed: 07-07-2023.
- Brønderslev Kommune, Aug. - Jan. 2021 - 2022.** *Brønderslev Kommune, 2021 - 2022.*  
Comprehensive plan for Asaa 2035. The document can be found by request at the municipality of Brønderslev.
- Brønderslev Kommune, 2015.** Brønderslev Kommune. *Landdistrikspolitik for Brønderslev Kommune.* <https://www.bronderslev.dk/p/Demokrati/Politikker%20og%20strategier/Politikker/Landdistrikspolitik.pdf>, 2015. Accessed: 07-10-2023.
- Brønderslev Kommune, Aug. - Jan. 2021.** *Brønderslev Kommune, 2021.* Local Regeneration of Asaa. The document can be found by request at the municipality of Brønderslev.
- C40 Cities Climate Leadership Group, 2021.** C40 Cities Climate Leadership Group. *Why every city can benefit from a '15-minute city' vision.* [https://www.c40knowledgehub.org/s/article/Why-every-city-can-benefit-from-a-15-minute-city-vision?](https://www.c40knowledgehub.org/s/article/Why-every-city-can-benefit-from-a-15-minute-city-vision?language=en_US) language=en\_US, 2021. Accessed: 08-09-2023.
- Chang, 2019.** Kang-Tsung Chang. *Introduction to Geographic Information Systems.* Paperback. McGraw-Hill Education, ninth edition edition, 2019. ISBN 978-7-259-95964-9.
- Creswell, 2009.** John W. Creswell. *Research Design - Qualitative, Quantitative, and Mixed Methods Approaches.* ISBN:978-1-4129-6557-6, Paperback. SAGE, third edition edition, 2009.
- Danmarks Statistik, 2023.** Danmarks Statistik. *Folketal 1. januar efter byområder og landdistrikter og tid.* <https://www.statistikbanken.dk/BY1>, 2023. Accessed: 07-10-2023.
- Dataforsyningen - Styrelsen for Dataforsyning og Infrastruktur, 2023.** Dataforsyningen - Styrelsen for Dataforsyning og Infrastruktur. *Dataforsyningen.*  
<https://dataforsyningen.dk/>, 2023. Accessed: 08-10-2023 - Dataforsyningen is a database for all public spatial data that can be used in GIS analysis e.g.
- ESRI, 2023.** ESRI. *What is GIS?*  
<https://www.esri.com/en-us/what-is-gis/overview>, 2023. Accessed 12.12.2023.

**Fonden Jernstøberiet, 2022.** Fonden Jernstøberiet. *Jernstøberiet - Fonden Jernstøberiet, Asaa - Vores kulturfabrik*. <https://xn--jernstberiet-0jb.dk/>, 2022. Accessed: 07-10-2023.

**Friluftsrådet, 2021.** Friluftsrådet. *Corona har boostet friluftslivet: Der er brug for mere bynær natur*. <https://friluftsradet.dk/nyheder/corona-har-boostet-friluftslivet-er-brug-mere-bynaer-natur>, 2021. Accessed: 07-9-2023.

**Geographyrealm, 2023.** Geographyrealm. *isochron*. <https://www.geographyrealm.com/how-to-create-public-transport-isochrones-in-arcgis-pro/>, 2023. Accessed: 08-12-2023.

**Gratton and Jones, 201.** Chris Gratton and Ian Jones. *Research methods for sport studies*. Hardback. Routledge, second edition edition, 201.

**Hans Ravn, 2023.** Hans Ravn. *Photo of Asaa Harbor and the Village taken by Hans Ravn for Nordjyske.dk*. <https://nordjyske.dk/plus/broenderslev/naturstempel-spaender-ben-for-udvikling-i-asaa-det-er-gaaet-utrolig-langsomt/f1625254-08df-4b4a-a294-7741676b5ba4/>, 2023. Accessed: 07-10-2023.

**Hirth et al., 2012.** Sonia Hirth, SONia Zahm and Jane Jacobs. *The Urban Wisdom of Jane Jacobs*. Planning, History and Environmental Series. New York : Routledge, first edition edition, 2012. ISBN 1-136-21189-6.

**Jensen, Oct. 2023.** *Line Toft Jensen*, 2023. Interview with landscape architect Line Toft Jensen from Brønderslev Municipality about the development of Asaa.

**Kommunernes Landsforening, 2018.** Kommunernes Landsforening. *Unge Mobilitet i Danmark*. <https://www.kl.dk/media/4euk5p0j/unges-mobilitet-i-danmark.pdf>, 2018. Accessed: 08-10-2023 - Notat om unges mobilitet i Danmark skrevet af Niels Henning Bjørn for KL.

**Kommunernes Landsforening, 2021.** Kommunernes Landsforening. *Tilbageflytning over tid*. <https://www.kl.dk/media/tsudfdpc/tilbageflytning-over-tid.pdf>, 2021. Accessed: 08-10-2023 - Analysenotat skrevet af Niels Henning Bjørn og Amalie Mellon Hansen for KL.

**Kristiansen and Krogstrup, 2015.** Søren Kristiansen and Hanne Kathrine Krogstrup. *Deltagende observation*. . Hans Reitzels Forlag, second edition edition, 2015. ISBN 9788741251981.

**Kvale and Brinkmann, 2009.** Steinar Kvale and Svend Brinkmann. *Interview: Introduktion til et håndværk*. . Hans Reitzels Forlag, second edition edition, 2009. ISBN 9788741251981.

**Landdistrikternes Fællesråd, 2022.** Landdistrikternes Fællesråd. *Årets Landsby 2022 er... Asaa i Brønderslev Kommune*. <https://www.landdistrikterne.dk/pressemeddelelser/aarets-landsby-2022-er-asaa-i-broenderslev-kommune/>, 2022. Accessed: 07-10-2023.

**Miljøministeriet, 2023.** Miljøministeriet. *Natura2000*.

<https://mst.dk/erhverv/rig-natur/naturindsatser/natura-2000>, 2023.  
Accessed: 27-12-2023.

**Moreno et al., 2021.** Carlos Moreno, Didier Chabaud, Zaheer Allam and Catherine Gall.

*Introducing the "15-Minute City": Sustainability, REsilience and Place Identity in Future Post-Pandemic Cities*. *Smart Cities*, 4(1), 93–111, 2021. doi: 10.3390/smartcities4010006. URL <https://doi.org/10.3390/smartcities4010006>.

**Mortensen, Dec. 2023.** Villy Mortensen, 2023. Interview with Villy Mortensen, chairman at Jernstøberiet in Asaa and member of the local council of Asaa.

**Plowright, 2015.** David Plowright. *Charles Sanders Peirce: Pragmatism and Education*. SpringerBriefs in Education. Springer Netherlands, first edition edition, 2015. ISBN 9789401773553.

**Regeringen, 2010.** Regeringen. *Danmark i balance i en global verden*.

<https://www.regeringen.dk/aktuelt/tidligere-publikationer/danmark-i-balance-i-en-global-verden/>, 2010. Accessed: 08-10-2023.

**United Nations, 2023.** United Nations. *The 17 Goals*. <https://sdgs.un.org/goals>, 2023.  
Accessed: 08-10-2023.

**Yin, 2018.** Robert Yin. *Case Study Research*. ISBN:9781506336169, Paperback. SAGE, sixth edition edition, 2018.

# Appendix A

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## A.1 Interview with Line Toft Jensen, Planner at Brønderslev Municipality

On October 19., the researcher conducted an interview with Line Toft Jensen, planner at Brønderslev Kommune. Toft Jensen is an architect and Planner at Brønderslev Municipality and has been working with the development of Asaa and the rural districts of Brønderslev. The interview was conducted as a semi-structured interview with an expert within the field. Before the interview, Toft Jensen was given a brief introduction of the agenda for the interview and introduced to the thesis' subject. The interview was not recorded but a summary has been written which has been approved by Toft Jensen.

A brief interview-guide was prepared beforehand: 1. The researcher asked Line Toft Jensen to introduce herself and her position at the municipality of Brønderslev

Toft Jensen works as a planner, is trained as a constructing architect and has been working with developing rural districts for a few years now. Toft Jensen was assigned to the development of Asaa a few years after the developmental plan for the village as approved by the city council of Brønderslev municipality.

2. Why has the municipality decided to develop Asaa?

The municipality of Brønderslev is very interested in developing many of their rural districts in order to attract more inhabitants to the municipality. Every year, the municipality distributes 0.5 million Danish Kroner to a development project in its rural district. This project must come from the citizens of the municipality and be bottom-up; passionate (ildsjæle) citizens must participate in the development/work. The 0.5 million Danish Kroner are only for the development of urban space. Asaa is also the only seaside town in the municipality of Brønderslev, which is why the municipality is interested in developing Asaa.

3. Asaa seems to be a small town with a tightly known community. Why has the municipality seen it necessary to assist in this development? And is it even necessary to develop Asaa?

The local council of Asaa and the active citizens have many ideas and visions for their small town. Sometimes the active citizens need assistance from the public authorities/municipality to realise their ideas. The municipality can also see the potential for tourism and the great draw Asaa can have for future citizens of Brønderslev Municipality.

4. How can the village ensure its survival?

Line Toft Jensen has several suggestions for the future survival of Asaa; cooperation across the village's actors such as the local grocer's, the school, the local council and of course the citizens. Toft Jensen mentioned that the local day-care has bought a cargo bike (ladcykel) to take the children to the nearby dock and the beach. This is also a step in the right direction of connecting the village



with the beach and dock. Moreover, Toft Jensen mentions authentic tourism as a potential. By creating something unique in Asaa, the village might be able to attract tourists looking for authentic experiences to the area.

## **A.2 Interview with Villy Mortensen, Chairman of Jernstøberiet in Asaa**

The interview with Villy Mortensen was conducted at his home office by agreement with all parties.

Villy Mortensen was asked about his involvement with the development of both Jernstøberiet and Asaa to which Mortensen explained that he was also part of the steering group tasked with the development of Asaa. The steering group decided together with Brønderslev Municipality to focus on three areas of the small town; Stjernepladsen, Jernstøberiet and the harbor. Moreover, the camping spot right next to the town was also pointed out as an important factor for the development with 6-700 guests throughout the summer. The work of the steering group has also focused on attracting tourists to the town - Mortensen mentioned several times that Asaa has many creative shops such as a ceramics' shop, artists living and visiting the town, the Jernstøberi which acts as a culture center (kulturhus) and many more. Jernstøberiet is also under development to become a cultural hub of sorts where artists and creative people can use the facilities for workshops, seminars, concerts, art exhibitions, etc. They have received 15 million Danish Kroners to renovate the building.

At the harbor, the café Havblik is also a strong point of attraction with many concerts during summertime. It is also an attractive spot to anchor smaller boats during fishing season.

When asked who took initiative for the development of Asaa, Mortensen explained that the municipality contacted the local council because they had noticed the strong volunteerism of the town and the tight knit community. The local council had already been attempting to develop Asaa in order to attract new, young families to the town because they had noticed the ageing population of Asaa. Brønderslev Municipality has also noticed that Asaa had been appointed "Village of the Year 2022" (Årets Landsby) which strengthened the possibilities of the possible development of Asaa.

The goal of the development is according to Mortensen to sustain the town and engage youths and elderly citizens. The local council is very aware of the moving rates (flyttekæder) of the municipality and they hope to change it for the better. Mortensen attached great importance to how the elderly preferred moving to the larger cities such as Dronninglund and Brønderslev, when they reached an age where their houses were too large and their needs for health services were no longer met in the small, rural town.

Lastly, Mortensen wanted to highlight the assets of Asaa; the racing track that celebrated its 100 years anniversary, the camping area for caravans, the harbor, Jernstøberiet, the growing artistic environment.



