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DENMARK

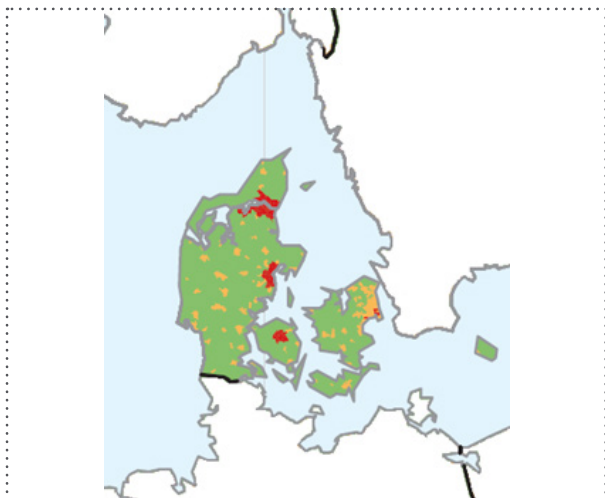
INSIGHT PAPER

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RURALITY (1)

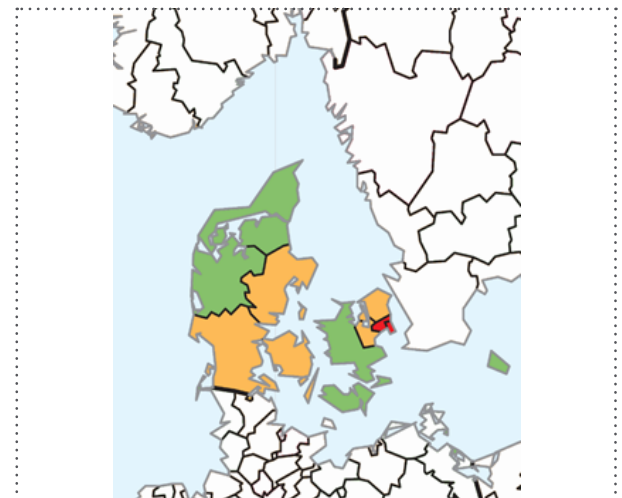
Degree of urbanisation for local administrative units level 2 (LAU2)



- Cities
- Towns and suburbs
- Rural Areas
- Data not available

Source: Eurostat, JRC and European Commission Directorate-General for Regional Policy, May 2016

Urban-rural typology for NUTS level 3 regions



- **Predominantly urban regions**
(rural population is less than 20% of the total population)
- **Intermediate regions**
(rural population is between 20% and 50% of the total population)
- **Predominantly rural regions**
(rural population is 50% or more of the total population)
- **Data not available**

Source: Eurostat, JRC, EFGS, REGIO-GIS, December 2016

DISTRIBUTION OF POPULATION

32.3%

Share of people living in cities

34.6%

Share of people living in towns and suburbs

33.1%

Share of people living in rural areas

Source: Eurostat, 2016

GEOGRAPHY

Denmark, officially the Kingdom of Denmark, is a Nordic country and the southernmost of the Scandinavian nations. The sovereign state is south-west of Sweden and south of Norway and bordered to the south by Germany. Figure 1 shows the administrative regions that constitute Denmark, as well as the major cities. The Kingdom of Denmark is a unitary state that comprises, in addition to Denmark proper, two autonomous constituent countries in the North Atlantic Ocean: Greenland and the Faroe Islands. They have been integrated parts of the Danish Realm since the 18th century; however, due to their separate historical and cultural identities, these parts of the Realm have extensive political powers and have assumed legislative and administrative responsibility in a substantial number of fields. Home rule was granted to the Faroe Islands in 1948 and to Greenland in 1979, each having previously had the status of counties. The scope of this paper is confined to Denmark proper.

Denmark has a population of 5.7 million and is the seventh smallest country in the European Union by area at 42,900 km² representing 0.9% of the total EU area. Denmark has the ninth highest population density in the EU (126 people per km²). Figure 2 shows a population density map of Denmark. In 2017, 88% of Denmark's population lived in urban areas, according to World Bank population estimates and urban ratios from the United Nations World Urbanization Prospects.

The administrative regions of Denmark were created as part of the 2007 Danish Municipal Reform. The counties (*amter*) were abolished and five regions were set up. At the same time, the number of municipalities (kommuner) was cut from 270 to 98. The governing bodies of the regions are the regional councils. The areas of responsibility for the regional councils are the national health service, social services and regional development. Unlike the counties they replaced, the regions are not allowed to levy taxes and the health service is partly financed by a national health care contribution until 2018 (*sundhedsbidrag*), partly by funds

from both government and municipalities. From the 1st January 2019 this contribution will be abolished, as it is being replaced by higher income tax instead.



Figure 1: Map of Denmark with administrative regions and major cities

The area and populations of the regions vary widely; for example, the Capital Region, which encompasses the Copenhagen metropolitan area with the exception of the subtracted province East Zealand but includes the Baltic Sea island of Bornholm, has a population three times larger than that of North Denmark Region, which covers the more sparsely populated area of northern Jutland.

The Danish landscape is very rural in character with around two-thirds of the area under agricultural land use. However, Denmark has avoided many of the

GEOGRAPHY

problems normally associated with countries with large rural areas, such as growing differences between strong growth centres and a weak and depopulated periphery.

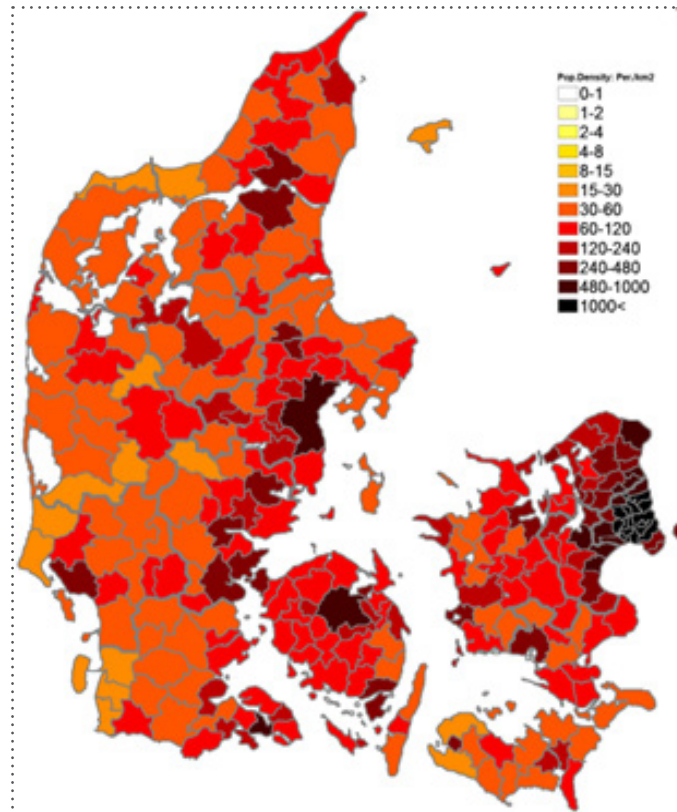


Figure 2: Population density map of Denmark

This is largely because of Denmark’s geographic and demographic characteristics. The country is so small that no location is physically very remote from large population centres, at least seen in comparison with most European countries.

This is important when considering the development potential of rural areas in Denmark in terms of access to job markets and service facilities. Due to the relative homogeneity, rural areas in Denmark largely experienced the same trends in population, income and job creation as the more urbanized part of the country over the past decades, and the funds allocated to disadvantaged rural areas are therefore modest compared to other European and Scandinavian countries (Kristensen, 2004). At a local scale, some rural areas have experienced negative population growth and economic decline – particularly where structural changes in the agricultural sector are leading to a reduction in the number of farms. There are important questions to examine regarding the future functions and viability of rural areas in Denmark, especially in municipalities dominated by agricultural production (Kristensen, 2004).

In demographic terms, there is a noticeable difference between rural and urban areas. Elderly persons (> 65 years) and children (< 16 years) constitute 39% of the population in rural areas but only 35% in urban areas. The proportion of economically active persons is therefore smaller in rural areas compared with urban areas. This creates a significant financial burden for rural municipalities to provide facilities and care for children and elderly. The composition of the rural economy has changed significantly in recent decades, as employment in the primary sector declined and other economic sectors, such as construction, private and public service and manufacture have increased. However, in the most remote rural areas employment in other sectors did not compensate for the decline in primary sector employment.

RURILITY (2)

13.1%

Share of people at risk of poverty or social exclusion in rural areas, 2017

1%

Share of people aged 16 and over who reported unmet needs for health care in the previous 12 months due to expense, distance to travel or length of waiting list in rural areas, 2017

5%

Unemployment rate, persons aged 15–64, in rural areas, 2017

11.3%

Share of young people aged 18–24 neither in employment nor in education or training (NEETs) in rural areas, 2017

Source: Eurostat

NATIONAL POLICIES RELATING TO RURAL MOBILITY AND PUBLIC TRANSPORT

The Danish government does not produce a single national integrated transport plan. Many of the responsibilities for transport are devolved to the municipal and regional levels (see Regulatory Framework section below). Greener transport. However, the traditional approach to transport provision in Denmark has been one of 'predict and provide', especially with regard to roads, echoing general practice in Europe more widely. Historically high car taxes have limited car ownership but with recent economic growth car ownership has grown significantly. High levels of taxation on car ownership have been applied over many years as a revenue raiser and were more politically feasible in Denmark than in Sweden due to the former's lack of an indigenous car industry. Public transport (especially bus) has been seen as a public service, albeit one whose efficiency can be increased through franchising. The more left-leaning Danish governments elected in 2009 and 2011 signalled a shift away from road construction (except

for the worst bottlenecks) and placed a much greater emphasis on public transport and cycling. This was motivated by a desire to tackle traffic congestion and to reduce greenhouse gas emissions (Urban Transport Group, 2017).

The government of Denmark does not have a Ministry with specific responsibility for rural affairs which is perhaps reflective of the commonality of issues and circumstances between urban and rural areas of the country discussed above. The Ministry of Environment and Food appears to have the most responsibility for rural policy areas as it includes the Danish Agricultural Agency, the Danish Veterinary and Food Administration, the Environmental Protection Agency and The Danish Nature Agency which includes the Danish Coastal Authority. There is no explicit reference to accessibility, mobility or the role of transport in relation to this Ministry on its website.

INSTITUTIONAL FRAMEWORK

The main responsibility of the Ministry of Transport, Building, and Housing lies within the following areas:

- Transport: roads, vehicles, railways, rapid transit systems (e.g. the Copenhagen metro), fixed links, harbours, ferry operations, aviation, airports and postal services.
- Building: national office buildings, building regulation, and regulation of the construction sector.
- Housing: social housing, housing regulation, and urban renewal.

The Minister of Transport, Building, and Housing is a member of the Government. Thus, the Minister holds the administrative as well as the parliamentary responsibility for the execution of the tasks, including implementation of the decisions made by Folketinget (the Danish Parliament) concerning the Minister's field of responsibility. The Ministry is the Minister's secretariat and assists the Minister with the governance and management of the Ministerial area, including ordinary secretarial tasks, strategic planning and policy formulation, as well as drafting laws, orders etc. with a view to implementing the Government's transport policy.

The daily administration and handling of tasks and assignments on transport are carried out by a number of institutions, executive agencies, corporations, councils and boards. Counting every institution and every corporation the Ministry employs around 40.000 people.

The Danish Transport, Construction and Housing Authority is an authority under the Ministry of Transport, Building, and Housing with responsibility and tasks across railway, road and air transport. It sets the framework for the Danish construction sector and buildings of the future and has the responsible for senior housing, public housing, student and youth housing, retirement housing, private rental and urban renewal. It also operates Bornholm Airport. The Authority covers the policy areas of road transport, motor vehicles, railways, ferries and civil aviation. It is a main aim for the Danish Transport Authority to increase safety in all modes of transport. The Authority is responsible for the regulation, planning and supervision of civil aviation. Furthermore, the Authority is responsible for implementing and supervising legislation on civil aviation. Within railway safety, the Authority regulates and enforces provisions on safety and interoperability.

INSTITUTIONAL FRAMEWORK

The Danish Road Directorate is responsible for the national road network, which comprises motorways, a number of main roads and many of the country's bridges – a total of about 4,000 kilometres.

These roads serve around 45 % of the entire road traffic in Denmark. The Danish Road Directorate's most important function is to ensure that our infrastructure develops in harmony with future social requirements. This concerns both private and public transport, as well as the environment. A priority issue for the Road Directorate is the planning, construction, maintenance and enlargement of the state-owned roads and the development of new construction methods. This includes developing and modernising the more than 1,000 km of motorway in Denmark.

- Construction: It manages the construction of roads and bridges undertaken by private suppliers and developers.
- Operations and maintenance: It operates and maintains the national roads in partnership with suppliers.

Banedanmark is a governmental body under the Ministry of Transport, Building and Housing. It is responsible for 3,102 km of railway tracks. Over 3,000 trains run on the rail network every day. On a daily basis, it is responsible for 40,000 arrivals and departures at stations all over Denmark. More than 196 million passengers and 8 million tons freight are transported annually on the network.



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Another priority is the continuous development of traffic management and road user information. The Directorate is responsible for the collection of traffic accident statistics, which is used in the road safety work on state and municipality roads.

The Directorate works in three main areas: Planning and design, Road and bridge construction, Operation and maintenance.

- Planning: It looks 10 to 15 years ahead, to take the future traffic needs of Denmark into consideration. As a basis for this it gathers and processes data covering traffic, safety and the environment.

Naviar has been designated by the Ministry of Transport, Building and Housing to provide aviation infrastructure. Naviar's core activity is air navigation services. Naviar has activities both in Danish airspace and North Atlantic airspace. The activities cover four areas: En route – Denmark, En route – Greenland, Local Air Traffic Services and Other areas of activity. Expressed in terms of revenue, En route – Denmark is the biggest area of activity.

ORGANIZATIONAL FRAMEWORK

Until the late 1980s, public transport was provided entirely by publicly owned monopoly operators. Rail services were all provided by the incumbent state operator DSB. Franchising of bus services under contracts to private operators began in Copenhagen in the early 1990s and then in other regions shortly thereafter. The bulk of rail services continue to be provided by DSB under a negotiated contract with the country's Department for Transport.

An important distinctive feature of Danish culture is the high level of cycling in its cities. Cycling accounts for 15% of all trips in Denmark and 1 in every 5 commuter trips are made on bikes. Almost 90% of all Danes own a bicycle.

The City of Copenhagen is now even officially 'Bike city of the world' and 'Best city for cyclists' with 45 % of its population cycling to work or to their place of education in the municipality. More than 60% of Copenhageners use their bike every day. Greater Copenhagen has over 1000 km of bicycle lanes. High levels of cycling can partly be attributed to low car ownership and investment in new cycling infrastructure.

Despite extensive searching no information on targeted mobility services for education and healthcare transport could be found.



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REGULATORY FRAMEWORK

The central Danish government is responsible for the areas of national sovereignty but is also involved in many welfare state issues that the municipalities and regions provide. Local governments are held responsible for a great variety of fields, including primary education, health, land use planning and transport. For example, road management is a municipal responsibility, covering 90% of Danish roads, yet, state roads carry a larger proportion of the traffic. In general, public transport in Denmark is organised as follows:

- National government funds the state-owned railway.

- Municipalities determine and fund their local bus networks.
- Regions determine and fund regional bus networks and in some cases own the infrastructure of a small number of Privatbaner local railways, and either operate those railways directly or contract for them.
- Long distance coach services are commercially operated however operators can claim reimbursement from the national Government for providing concessionary fares.

REGULATORY FRAMEWORK

Denmark has two types of rail provision: state railways (Statsbanen) and a small number of private railways (Privatbaner). The state railways consist of the rail infrastructure and operations services; and operations, mostly covered by the state-owned operator DSB (via a directly awarded contract) but also to a small extent by private operators who have won tenders.

The state-owned railway is responsible for the operation of intercity traffic, regional traffic and S-trains (in the Copenhagen area), and the maintenance and enhancement of associated infrastructure^{vii}.

Privatbaner are four local branch railways, owned by the passenger transport authorities (trafikskaber), municipalities and small private owners. They are mostly operated in-house except for one which has been contracted out for operation to Arriva.

constituent regions and municipalities. There are six PTAs, Movia (which includes Copenhagen) is made of two regions and 45 municipalities whilst the other five PTAs each cover one region and between ten and nineteen municipalities^{vii}.

Municipalities are responsible for the majority of the infrastructure for bus services: stops, shelters, bus lanes and signal priority. Regions can also provide infrastructure, although they then hand ownership to the municipalities. Examples of the infrastructure that the regions can provide include terminals, travel information systems and waiting rooms.

The Danish government does not produce a single national integrated transport plan however the Danish Transport, Construction and Housing Authority produces a rail plan every four years.



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In Denmark local and regional public transport services are determined and funded by local government (municipalities for local bus services and regional government for regional bus services and the Privatbaner). For the detailed planning, contracting and oversight of those services regions and municipalities group together into wider Passenger Transport Authorities (Trafikskaber) which they collectively own and govern. Whilst the municipalities and regions decide on the overall level of services they want and how much they are prepared to fund, the PTA is responsible for translating that into planning, travel information, fares and ticketing and procurement of networks of services that fulfill the overall aims and wishes of their

There have also been multi-modal studies and plans for particular areas (such as for connections between Eastern and Western Denmark).

FINANCIAL FRAMEWORK

The transport investment priorities of the Danish Government at the national level were set out in the publication Danish Infrastructure Investments in 2012. This includes substantial investments in railways, infrastructure for buses and a new metro line in the city of Copenhagen. The strategy also includes investments in ports, new and improved roads, infrastructure for bicycles and traffic safety initiatives. Many of the projects, like the Fehmarn Belt fixed link between Denmark and Germany, have an international dimension and have a great significance for the interaction with the European infrastructure.

The Fehmarn Belt fixed link is a prioritised EU project. The fixed link will also strengthen the “green transport corridor” from Stockholm in Sweden to Palermo in Italy. According to plan, the connection will be ready for use in 2020. The preferred technical solution for the Fehmarn Belt Fixed Link is an immersed tunnel for rail and road traffic. The tunnel will be one of Europe’s largest infrastructure projects.

Given the nature of Denmark’s topography, bridges are critical to connectivity. These can be international (e.g. between Sweden and Denmark) and regional (e.g. Funen and Zealand). Use of such bridges incurs a user charge, which in turn is used to pay the costs associated with the construction of the bridges over a number of years. The same principle will be used at the Fehmarn Belt Fixed Link.

In recent years there has been heavy investment in upgrading the existing rail infrastructure in Denmark. Further investments will be made in a new Metro Line in Copenhagen and in the European Rail Traffic Management System (ERTMS). The Danish authorities will also conduct a program focused on repairing and replacing rail tracks and bridges in order to improve the reliability. This is a prerequisite of the establishment of a Danish “high speed strategy” the new “One-Hour” model. The premise of the model is a travel time of one hour by train between the four largest cities (Copenhagen – Odense – Aarhus – Aalborg) respectively. As a part of the One-Hour model, a new 200 km/h line is being constructed in the TEN priority corridor between Copenhagen and Ringsted and is due to open in spring 2019. The line will play a key part in connecting Copenhagen to the Fehmarn Belt Fixed Link between Denmark and Germany. In cooperation with the two municipalities of the centre of the capital (Copenhagen and Frederiksberg) an extension of the existing metro lines in the city of Copenhagen with

a new city metro line encircling the central part of the city has been decided. New stations will begin opening in 2019 with completion expected by 2024.

A number of road projects have been initiated in the Copenhagen metropolitan area, areas on the island of Funen and in Jutland. Furthermore, it has been decided to conduct several specific ITS projects on the TEN-T motorways, which includes variable speed limits, dynamic traffic information, flexible traffic lanes etc., and a feasibility study on the implementation of a digital road network providing improved traffic management systems. A 25 km 4 lane motorway between Sønderborg and Kliplev in Jylland has been constructed. The Kliplev-Sønderborg motorway is the first Danish motorway carried out as a Public Private Partnership (PPP).

As a part of the agreement on the new green transport policy in 2009, a major Infrastructure Fund was established to provide funds for projects that have been decided until 2020. The Infrastructure Fund is financed partly by tax revenues and partly by other sources such as returns from the sale of public assets, road pricing including toll from the Oresund and the Great Belt fixed link and tax financed means. The Fund is dynamic and replenished with additional means as new sustainable sources of funding are identified, as well as with savings on projects decided within the Fund. Also “land value capture”, where investments in transport increases land value, is used as a part of the financing.

Long-term planning effort to analyse further large-scale infrastructure demands in the years after 2020 and identify major strategic options for further infrastructure investments beyond 2020 has also been initiated. The strategic analyses focus on three central themes that have a vital impact on the long-term infrastructure planning in Denmark: 1) The road system in Jutland, 2) the east-west connections between Jutland, Funen and Zealand, and 3) the ring roads and public transportation in the Greater Copenhagen area.

OTHER INFORMATION

One area in which rural mobility innovation is evident in Denmark is in the application of Mobility as a Service (MaaS). The mobile application 'MinRejseplan' or My travel plan, is a MaaS currently being developed by the Transport Authority of Northern Denmark (Nordjyllands Trafikselskab - NT). In addition to MinRejseplan, a Travel on Demand (ToD) solution called Plustur which is now available across Northern Jutland. NT has been working to improve mobility in their rural areas by focusing on responsive solutions for elderly and for others which are also better coordinated with public transport. Another issue was how to transport users the last mile, to and from the main bus routes and stops to people's homes.

Plustur is only available in designated rural areas, as a way to keep the number of users within the budget limit. At the launch of the MinRejseplan application in May 2018, Flextur and Plustur were included, i.e. possible to book via the app, together with the ride sharing service GoMore (Mamba Project, 2018).

Another rural MaaS example is in Vejle and the South Denmark region, where many rural areas have limited access to public transport and services. A digital Mobility Centre will be established to integrate existing mobility options and create a platform where citizens can easily get an overview of available mobility services and order transport-on-demand rides.



Photo by Nils Nedel on Unsplash

By developing MinRejseplan, NT aims to make it easier for users/residents to plan their journeys from A to B while also making more options available – both public and private. Options that were added besides regular public transport were ToDs (Flextur, Plustur), taxis and GoMore, a carpooling company. Flextur was launched in 2003 as a public mobility service for elderly residents. It is still coordinated with the service for elderly but can be used by all residents in Northern Jutland on any chosen route from A to B. Plustur was launched more recently as an option to transport users for the last mile from their homes to the nearest main bus stop or train station.

The innovativeness of this pilot action lies in the development of a user-friendly mobile application, and in involving local citizens in the process, thus strengthening neighbourhood's social resilience.

KEY STAKEHOLDERS AND MINISTRIES ADDRESSING RURAL AREAS

TITLE	ROLE
Danish Ministry of Transport, Building and Housing	Responsible for all forms of transport and associated infrastructure, including roads, vehicles, railways, rapid transit systems, fixed links, harbours, ferry operations, aviation, airports and postal services.
Danish Transport, Construction and Housing Authority	Covers the policy areas of road transport, motor vehicles, railways, ferries and civil aviation. It is a main aim for the Danish Transport Authority to increase safety in all modes of transport.
Danish Road Directorate	Responsible for the national road network, which comprises motorways, a number of main roads and many of the country's bridges.
Banedanmark	Responsible for 3,102 km of railway tracks.
Naviair	Aviation infrastructure and air navigation services

LINKS TO WEBSITES

- www.trm.dk/en
- www.trafikstyrelsen.dk/en.aspx
- www.vejdirektoratet.dk/EN
- uk.banedanmark.dk
- www.naviair.dk/page479.aspx

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- Mamba Project (2018) MinRejseplan and Plustur –two ways to maximise mobility in rural, Northern Denmark. www.mambaproject.eu/wp-content/uploads/2018/07/WP2_good-practice-cases_-MinRejseplan-and-Plustur-FINAL.pdf