
Photo: Andreas Falk. Beach on Langeoog.

# Wadden Sea Quality Status Report

## Tourism

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# 1. Introduction

The trilateral Wadden Sea UNESCO World Heritage Site and its surrounding wider region - in this Quality Status Report (QSR) referred to as 'the Wadden Sea World Heritage destination' - includes many highly popular tourism destinations. Moreover, the UNESCO World Heritage label strengthens the region's image and identity as a whole and can be an instrument to support integrated tourism marketing and management across three countries and numerous destinations.

Throughout the region, tourism is a well-developed economic sector and thus a major pillar for socio-economic development, livability and wellbeing, particularly on many of the Wadden Sea's islands. Revenues created by millions of daily visitors and guests who stay overnight contribute to economic stability as well as a positive attitude towards nature conservation, given that outstanding and intact nature is understood to be the region's main competitive factor. However, as in many other cases, a potential trade-off exists between the promotion of nature-based attraction with the aim of generating tourism revenues, and the risk of negative impacts of overtourism on communities, ecosystems, and the World Heritage Site's Outstanding Universal Value (OUV). Balancing the positive and negative impacts of tourism, with the aim of maximizing the former, and minimizing the latter, is thus a key task for tourism managers.

In this regard, data collection and monitoring are essential prerequisites for informed decision-making to achieve sustainable tourism management and development. Sustainable tourism, according to UNESCO's definition, is "tourism that respects both local people and the traveller, cultural heritage and the environment". While most stakeholders in most destinations would agree that these are worthwhile goals, their concrete implementation is often subject to disagreement and misunderstanding. What sustainable tourism development exactly means, thus, has to be defined, agreed on, and supported by all relevant actors. Following the request of the World Heritage Committee, a trilateral task group covering the Wadden Sea region was formed in 2010 representing nature administration at a state and regional level, tourism and marketing organisations and green non-governmental organisations (NGOs) involved in management and tourism planning in the Wadden Sea World Heritage Destination. This group was called 'Task Group Sustainable Tourism Strategy' and developed a Sustainable Tourism Strategy (published in 2014) with a common vision statement with the following four strategic objectives:

1. To ensure all stakeholders have a transnational understanding and appreciation of the values of the Wadden Sea World Heritage property.

2. To ensure stakeholders have responsibility for and contribute to the protection of the 'Outstanding Universal Value' through involvement in tourism management and product development.

3. To ensure the tourism sector provides consistent communication and marketing and promotes the high-quality tourism offers of the Wadden Sea World Heritage Destination.

4. To ensure nature conservation, tourism, and local communities benefit from the World Heritage Status.

These objectives shall ensure preventing both an overshoot as a result of too much emphasis on tourism development and a shortfall of economic activities that support many livelihoods in the region. Achieving and maintaining this balance is a delicate process which benefits from informed decision making inspired by the monitoring and data collection of Key Performance Indicators (KPIs). Similar goals along the lines of those mentioned are regularly included in local and regional policy documents on tourism.

One of the main challenges lies in the collection and communication of up-to-date, consistent, and comparable data across the three countries of the trilateral Wadden Sea region. Currently, statistics for the three countries are often not comparable due to the different methodologies, regional bases, base years and differences in the availability of data.

The aim of this QSR 2022 on tourism is to make an attempt to assess available information about the tourism industry from three countries and various sources and present it in a comprehensive manner. We, thereby, describe common features of regional tourism structures, as well as differences, and we present some of the identified data incompatibilities (sections 2.2 and 2.3). The recommendations in section 3 present avenues along which data collection and monitoring can be improved, inspired by a set of key forces driving change in tourism that stakeholders should be prepared for (section 2.4).

# 2. Status and trends

## 2.1. Monitoring in the Wadden Sea region

This section presents a brief overview per country on what data is available, the type of sources, and important characteristics of the data(sets). To allow for comparisons with previous QSRs (2004, 2009, 2017), the geographical area under study consists of 18 different administrative areas (provinces, districts and municipalities) in Denmark, Germany and the Netherlands adjacent to the Wadden Sea region (see Figure 1).

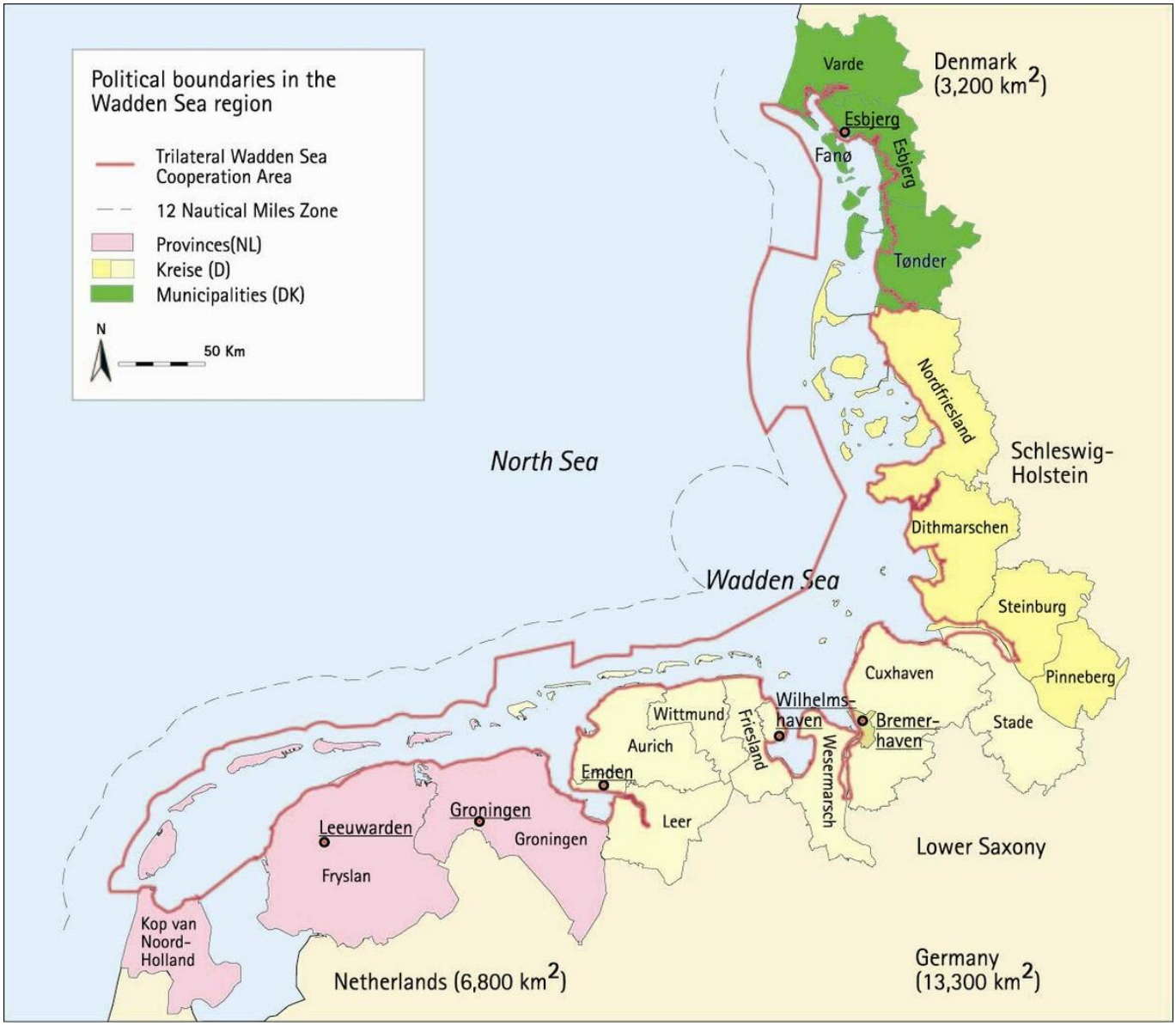


*Figure 1: The Wadden Sea World Heritage Destination (World Heritage Tourism Strategy). In line with previous versions of the QSR the counties of Stade in Lower Saxony, Bremerhaven and Pinneberg and Steinburg in Schleswig-Holstein are not considered in this report.*

**Denmark**

Four municipalities cover the Danish part of the Wadden Sea region. Many of the data are available from Statistics Denmark, the national statistics bureau, on a municipal level and these were compiled to get to the data for the Wadden Sea region. Yet, some data are only to be found on bigger regional levels in the statistics and were therefore not included here. More specific data, e.g., those on tourism economic impact are available from the national tourism bureau, VisitDenmark, which publishes their analyses in reports. Lastly, the Danish Wadden Sea National Park also contracts consultancies to undertake survey-based studies of the tourists specifically in the area. One of such reports served as the background for the percentages of repeat visitors and visitor satisfaction.

**Germany**

The region considered for Germany includes ten districts in the states of Lower Saxony and Schleswig-Holstein. Data is available from various sources, and the regional levels vary slightly in some cases. E.g., data

on population, area size, tourist arrivals, overnight stays and bed capacity is obtained from the statistics offices of the two federal states. Note that official statistics only consider accommodation facilities with ten or more beds or campgrounds that can accommodate at least 10 overnight guests.

Data on expenditures and economic impacts are not included in the official statistics and need to be obtained from other studies which are often not regularly updated. For Schleswig-Holstein, expenditure data is available in a study published by DITF – German Institute for Tourism Research at West Coast University of Applied Sciences (Heide) and NIT (Kiel) . For Lower Saxony, expenditure data were collected in the framework of a research project on the economic impacts of tourism in the Lower Saxony Wadden Sea National Park.

**The Netherlands**

Data is retrieved from a variety of sources. Data from the National Bureau of Statistics (CBS) are consulted, providing insights on a Provincial level into the share of foreign visitors, number of accommodations and their capacities, however other data is presented on a national level only. Other sources that were used include the national employment register 'LISA' for employment data on a municipal level, visitor surveys to the Dutch Wadden Sea islands, the study on coastal tourism by the National Board for Tourism and Conventions (NBTC), overview reports produced by the province of Groningen and Friesland (including data from the 'CVO' and 'CVTO' survey on tourism and leisure) as well as by local municipalities.

The findings from the three different countries are presented in table 1 below. The findings are derived from secondary sources only. No new fieldwork has been conducted for the sole purpose of updating this QSR. To gather the findings, a wide range of sources had to be consulted and combined to provide an overview. As such, there are various remarks to consider when interpreting the numbers in table 1:

- Table 1 presents data which are retrieved from publicly available sources. Data from official statistics typically doesn't include 'grey accommodation' such as Airbnb, second (summer) houses, accommodations with very limited capacity beds (e.g. 5 or less)

- Table 1 presents averages. Data can vary between locations (e.g. island versus mainland) and per type of accommodation (e.g. hotel, campsite or group accommodation)

- The numbers of day visitors are not officially registered in Denmark, so this number is an estimate, given by the NP Manager of the Danish Wadden Sea NP.

- The definitions of the borders of the tourist destinations in Denmark have been changed since the last QSR. There used to be a destination called 'South West Jutland', which covered the four municipalities of Wadden Sea, but this area has now been split into three different destinations and two of these include areas much beyond the Wadden Sea. This makes the obtaining of tourist data more challenging.

- The data for the Netherlands included the entire provinces of Groningen and Friesland. This is in line with the previous QSR reports and in line with the area delineation as used by the CWSS.

## 2.2. Current status of tourism in the Wadden Sea region

*Table 1: An overview of the current status of tourism in the Wadden Sea UNESCO World Heritage Site based on the latest available numbers for 2019/2020.*

| | Netherlands | Germany | | Denmark |
|---|---|---|---|---|
| | | Lower Saxony | Schleswig-Holstein | |
| **Population** | 1,386,623 | 928,703[3] | 300,398[4] | 206,298 |
| **Area (km²)** | 6,230 | 6,742[3] | 3,511[5] | 3,377 |
| **Visitor arrivals (million)** | Approx. 3[6] | 3.3[3] | 2.1[7] | |
| **Overnight stays (million nights)** | 11.3[8] | 15.3[3] | 11.9[7] | 7.9[9] |
| **Average length of stay (nights)** | 4-5[10] | 7.4 (8.4 days)[3] | 4.8 (5.8 days)[11] | 8-9[12] |
| **Tourism intensity (overnight stays/1,000 inhabitants)** | 8,149[13] | 16,461[13] | 39,559[13] | 38,294[14] |
| **Foreign visitors in %** | Mainland and Ameland: 14-19.5% | 2.0[3] | 2.2[16] | 71.6%[17] |
| | Other islands: 5%[15] | | | |
| **Day visits (million)** | | 2.0[2] | | 3.5 (estimated)[18] |
| **Bed capacity** | 151,115 | 112,871[1] | 88,9827[5] | 25,002[17] |
| **Bed capacity utilization** | 30-70%[20] | 38.2%[3] | 37.5%[13] | 21%[21] |
| **Daily spending (commercial operations) in EUR** | Overnight tourists: 55-70 | Overnight tourists: 84.10[2] | 7300[1] | Overnight tourists: 124[22] |
| | Day visitors: 50-70 | Day visitors: 29.40[2] | | Day visitors: 60 |
| **Tourism revenue – overnight tourists (million EUR)** | 500-510[23] | 1,557[2] | 1,311[24] | 982[25] |
| **Tourism revenue – day visitors (million EUR)** | 1,600-1,700[26] | 58.5[2] | 357.2[24] | 205[27] |
| **Total tourism revenue (million EUR)** | 2,100-2,210[28] | 1,615[2] | 1,669[24] | 1,187[29] |
| **Tourism employment** | 42,610[30] | Income equivalent 38,367[2] | Income equivalent 35,800[24] | 10,866[31] |
| **Repeat visit** | Islands: 75-85%[32] | | | 56%[33] |
| **Visitor satisfaction** | Dutch islands: score of 8.6-8.7 on a scale of 1-10. | | | 87% satisfied and very satisfied[34] |

## 2.3. Comparison of QSR 2022 findings to previous QSRs

*Table 2. The figures for QSR 2004, 2009 and 2017 were derived from the 2017 QSR report.*

| Tourism Related Parameter | QSR 2004 | QSR 2009 | QSR 2016 | QSR 2021 |
|---|---|---|---|---|
| **Population** | | | | |
| Netherlands | | | | 1,386,623 |
| Germany - Lower Saxony | | | | 928,703 |
| Germany - Schleswig-Holstein | | | | 300,398 |
| Denmark | | | | 206,298 |
| **Area (km2)** | | | | |
| Netherlands | | | | 6,23 |
| Germany - Lower Saxony | | | | 6,742 |
| Germany - Schleswig-Holstein | | | | 3,511 |
| Denmark | | | | 3,377 |
| **Visitor arrivals (million)** | | | | |
| Netherlands | | 4.8 | 4.4 | 3.0 |
| Germany - Lower Saxony | | 1.9 | 3.0 | 3.3 |
| Germany - Schleswig-Holstein | | 1.9 | 1.7 | 2.2 |
| Denmark | | N/A | N/A | N/A |
| **Overnight stays (million nights)** | | | | |
| Netherlands | 13.3 | | 23.8 | 11.3 |
| Germany - Lower Saxony | 30.3 | 13.4 | 13.8 | 15.3 |
| Germany - Schleswig-Holstein | 15.8 | 15.7 | 9.1 | 11.9 |
| Denmark | 4.7 | 6.6 | 6.5 | 7.9 |
| **Average length of stay (nights)** | | | | |
| Netherlands | | 5.4 | 4.0-4.5 | 4.0-5.0 |
| Germany - Lower Saxony | 7.8 | 7.2 | 4.6 | 7.4 (8.4 days) |
| Germany - Schleswig-Holstein | 8.5 | 7.0 | 5.3 | 4.8 |
| Denmark | | N/A | N/A | 8.0-9.0 |
| **Tourism intensity (overnight stays/1,000 inhabitants)** | | | | |
| Netherlands | | | | 8,149 |
| Germany - Lower Saxony | | | | 16,461 |
| Germany - Schleswig-Holstein | | | | 39,559 |
| Denmark | | | | 38,294 |
| **Foreign visitors in %** | | | | |
| Netherlands | | 27.5 | 17.0 | Mainland and Ameland: 14-19.5<br>Other islands: 5.0 |
| Germany - Lower Saxony | | 1.1 | 3.1 | 2.0 |
| Germany - Schleswig-Holstein | | 0.5-2.0 | 3.8 | 2.2 |
| Denmark | | 88 in holiday homes | 68.5 | 71.6 |
| **Day visits (million)** | | | | |
| Netherlands | | 63.1 | | |
| Germany - Lower Saxony | | 32.5 | 32.3 | 2.0 |
| Germany - Schleswig-Holstein | | 12.5 | 12.8 | |
| Denmark | | | | 3.5 |

| Tourism Related Parameter | QSR 2004 | QSR 2009 | QSR 2016 | QSR 2021 |
|---|---|---|---|---|
| **Bed capacity utilization** | | | | |
| Netherlands | | | 25.0-48.0% | 30.0-70.0% |
| Germany - Lower Saxony | | 33.2% | 37.1% | 38.2% |
| Germany - Schleswig-Holstein | | 31-35% | 35.3% | 37.5% |
| Denmark | | 33.1% | 25.0% | 21.0% |
| **Daily spending (commercial operations) in EUR** | | | | |
| Netherlands | | 39 | 40-100 | Overnight stay: 55-70<br>Day visitor: 50-70 |
| Germany - Lower Saxony | | 67 | 86 | Overnight tourists: 84.10<br>Day visitors: 29.40 |
| Germany - Schleswig-Holstein | | 73 | 96 | 73 |
| Denmark | | 54 | 75 | Overnight stay: 124<br>Day visitor: 60 |
| **Tourism revenue – overnight tourists (EUR million)** | | | | |
| Netherlands | | 530 | | 500-510 |
| Germany - Lower Saxony | | 1,555 | 1,100 | 1,557 |
| Germany - Schleswig-Holstein | | 1,150 | 1,500 | 1,311 |
| Denmark | | 358 | 451 | 982 |
| **Tourism revenue – day visitors (EUR million)** | | | | |
| Netherlands | | 884 | | 1,600-1,700 |
| Germany - Lower Saxony | | 825 | 927 | 58.5 |
| Germany - Schleswig-Holstein | | 414 | 346 | 357.5 |
| Denmark | | | 164 | 205 |
| **Total tourism revenue (EUR million)** | | | | |
| Netherlands | 586 | 1,414 | 2,176 | 2,100-2,210 |
| Germany - Lower Saxony | 588 | 2,380 | 2,027 | 1,615 |
| Germany - Schleswig-Holstein | | 1,564 | 1,846 | 1,669 |
| Denmark | 267 | 358 | 640 | 1,187 |
| **Tourism employment** | | | | |
| Netherlands | | 38,138 | 39,293 | 42,61 |
| Germany - Lower Saxony | | 40,383 | 4,906 | Income equivalent 38,367 |
| Germany - Schleswig-Holstein | | | 9,655 | Income equivalent 35,800 |
| Denmark | | 3,500 | 5,100 | 10,866 |
| **Repeat visit** | | | | |
| Netherlands | | | | Islands: 75-85 % |
| Germany - Lower Saxony | | | | |
| Germany - Schleswig-Holstein | | | | |
| Denmark | | | | 56% |
| **Visitor satisfaction** | | | | |
| Netherlands | | | | Dutch islands: score of 8.6-8.7 on a scale of 1-10. |
| Germany - Lower Saxony | | | | |
| Germany - Schleswig-Holstein | | | | |
| Denmark | | | | 87% satisfied and very satisfied |

The data in Table 2 allow making several observations about tourism development in the region: Visitor arrivals seem to be relatively stable, even showing signs of a slight increase. It needs to be remembered, that most data here is from the pre-covid era. COVID-19 has affected tourism in the region, but its full impact cannot be derived from the present data. This impact includes shifts between inbound tourism and domestic tourism. Many places have seen an increase in domestic visitors and a decrease in inbound tourists, and as domestic tourism replaced much international tourism, the overall results were quite good seasons for tourism – albeit with some subsectors having had a tough year in 2020 (e.g., group accommodations). Further data will be needed to analyze the specific impact COVID-19 and the lockdowns have had on the region, and this is beyond the scope of this report. The data also show a generally high Tourism intensity in the Wadden Sea World Heritage destination. The figures for the Netherlands are relatively low but this is because the entire surface of the provinces of Groningen and Friesland are included in the calculation of the intensity. The intensity on the islands of the Dutch part of the Wadden Sea is clearly much higher due to the small host communities and large volumes of visitors annually. The overnight stays in Denmark have shown a continuous increase throughout the years, the numbers for Germany also show a recent increase, while in the Netherlands, the average length of stay has been relatively stable. Numbers for Germany appear to have decreased slightly (a common trend in tourism overall), whereas for Denmark the (un)availability of the data does not allow for proper comparisons. Yet, the most recent data show longer average stays in Denmark, compared to the Netherlands and Germany. The percentage of foreign visitors is highest in Denmark, while it is lowest in Germany. In the Netherlands, there are quite big differences, particularly between the islands,

with Ameland being very popular amongst German visitors for instance. This figure is expected to look differently for the COVID-19 lockdown years, where domestic tourists replaced much of the international ones. The bed capacity remains rather stable, and the difference in the numbers between the years is often caused by changes in what is included in the official statistics available. On the Dutch islands, there are signals of decreasing availability as some holiday houses are taken off the market and used for private purposes only. The average annual bed capacity utilization sits around 30-40%, derived from the formal statistics made available via national bureaus of statistics. Nevertheless, during high seasons the utilization can go up to 90 or even 100% depending on the specific location and type of offer due to the popularity of sites within the region. While the tourism revenue from overnight tourists has been relatively stable during the years in the Netherlands as well as Germany, the table shows a considerable increase in Denmark since the previous QSR. This is for a big part caused by a change in how the official statistics are prepared, and these figures are therefore hardly comparable. The Wadden Sea World Heritage region is a popular destination for repeat visitors, who according to the available statistics, range from 56% in Denmark to about 85% for some Dutch islands. Finally, available visitor satisfaction surveys show high satisfaction among the tourists in Denmark and the Netherlands.

## 2.4. Key forces driving changes in tourism in the Wadden Sea region

This section draws attention to a set of key forces driving change in tourism, taking inspiration from the OECD (2018) report. This set of key forces driving change is not meant to be exhaustive, it is meant to help point out important new challenges for data collection and monitoring. The key forces listed can be viewed as an aid to raising awareness around possible future impacts of important forces operating in the Wadden Sea region. These changes should also be taken into consideration when deciding what to monitor and how to monitor the development of tourism in future.

## Driving force no. 1: Evolving visitor demand

**Description of trend/force**

The demand of visitors for tourism products is highly dynamic. This dynamism drives change as the tourism sector needs to adapt and co-evolve to ensure a fit between supply and demand. First, there are demographical changes, i.e., an ageing population, the rise of generations Y and Z and a growing middle-class worldwide. The ageing population whose travel choices are experience-driven desires lifelong learning and demands inclusive and accessible travel. Secondly, the rise of generations Y and Z mean demand for digitalization, authentic experiences, and individual travel opportunities. Finally, worldwide, there is a growing middle class that can travel further and more often.

**Possible impacts on tourism in the Wadden Sea Region**

These changes (demographic, behavioural and economic) in visitor demand provide opportunities, but also present challenges (requirements) for tourism providers in the Wadden Sea Region. Generally, the tourism stakeholders in the region, when using the local, natural, and cultural heritage, should be in an advantageous position to supply both the elderly and the younger generations with authentic experiences. A challenge for the local providers lies in requirements for improved accessibility for the elderly tourists, and for digitalized services/offerings for the generations Y and Z. Diversity of experiences, but also of accommodation options, will also be necessary to catch the market of the multigenerational and/or extended family travels. To catch the growing middle class in developing countries, the region should team up with national tourism offices to be included in marketing efforts overseas.

**Possible consequences and implications for monitoring and data**

Better data availability e.g., on consumer demand and market dynamics will give tourism stakeholders in the region better opportunities to adapt to the changing needs of the travel market. There is therefore a need for different means of obtaining data from the different groups. While the tourism planners and stakeholders could take advantage of the digital generations for the collection of digitalized data/big data, they also need to find ways of obtaining data from the older generations. Data on visitation to specific places in the region can be used to maintain or improve facilities or for improvement of accessibility. For this, alternative modes of data collection, such as drones or wearable censors offer some possibilities.

## Driving force no. 2: Sustainability awareness

**Description of trend/force**

The second force driving change is the increasing awareness of sustainability in society. There is a complex relationship between tourism and nature, with tourism being dependent on the natural, ecological and heritage values of the destination, and the tourism sector both having opportunities to contribute to its protection, but also posing 'visitor pressures' on those values and being a contributor to climate change and related issues. Overtourism has become an issue in some places, and movements such as flight shame and slow travel lead slowly but surely to changing travel landscape towards sustainable travel modes, as well as the greening and decarbonization of travel.

**Possible impacts on tourism in the Wadden Sea Region**

The increasing awareness of biodiversity and nature can be positive for a visitor attraction to the Wadden Sea Region, but also for the visitors' willingness to behave respectfully while there. On the other hand, increasing demand for nature experiences also requires the management of tourism activities to be in accordance with nature protection. For different tourism stakeholders, authorities as well as SMEs, this implies, on the one hand, the need to coordinate and collaborate to avoid overcrowding or overuse of ecologically sensitive areas, and on the other hand, the need to develop sustainable tourism products, that will cater to this market. Among these could be activities educating the visitors about nature and biodiversity, and sustainable behaviour.

This trend focusing on sustainability also means more focus on local (domestic) markets. And with many tourists in the Wadden Sea region being repeat visitors, this also puts pressure on tourism providers to develop (and renew) products that will continue to appeal to this market.
While hiking and biking routes are already developed in many places within the region, most of the visitors access the Wadden Sea region by car. To aid the movement towards more sustainable travel modes, as well as to lessen congestion issues in the most popular places, public transport alternatives deserve more attention from the stakeholders.

This trend of increased focus on sustainability might also necessitate a discussion of which areas of the Wadden Sea tourists should or should not have access to, or at which times they should not do so. Further, a discussion of the types of activities and means of transportation allowed in the Wadden Sea Region might also be timely.

**Possible consequences and implications for monitoring and data**

High-quality data and monitoring is required for the sustainable management of the region. To identify places

where implementing public transport alternatives or other means of congestion avoiding initiatives would make sense, there is a need to monitor the traffic flow and extent first. In addition to data on congestion, data on resource use, social impacts of tourism, visitor satisfaction as well as general awareness about the UNESCO World Heritage status and Outstanding Universal Value (OUV) are among important factors for decision making for sustainable management. Local communities should be consulted regarding the social impact of tourism, while regular visitor surveys at visitor centres and other places with high tourism flow could shed light on visitor satisfaction, as has for example been done in the Danish NP by Wilke (2019), or most recently for the whole Wadden Sea Region by the trilateral visitor survey implemented under the PROWAD LINK project.

## Driving force no. 3 Enabling Technology

**Description of trend/force**

The third major driving force of change is related to ongoing advancements in (ICT) technology and digitalization. Firstly, there is a trend toward data-driven decision making. Second, there is a trend toward the use of digitalization, automation and digital platforms for marketing and booking, including the creation of new customer experiences. The implementation of technology into the daily service or product provision offers the opportunity of providing higher service levels and quality. However, the amount of information and variety of channels and platforms available create a complex environment for both providers and tourists to navigate in. Furthermore, there is also a countertrend emerging, by the people seeking to unplug, to escape from the all-encompassing digital presence.

**Possible impacts on tourism in the Wadden Sea Region**

Technology development puts several requirements on the tourist stakeholders in the region, but also provides them with opportunities. Not only the tourism SMEs need to keep up with digitalisation, but so do authorities (National Parks for example) to reach the visitors accustomed to using digital solutions. The widespread use and acceptance of technology also provide the option to implement new technologies as complements or substitutes when necessary to the ‘real’ product, to ease the pressure on the natural environment. This can also contribute to the creation of new customer experiences (e.g., using VR-glasses for bird watching).

Incorporating digital systems/solutions for an easier process of booking, checking in, and registering visitors can provide tourists with a seamless travel experience. Yet, the solutions need to add value to the experience, and not be perceived as a burden (e.g., with weak Internet coverage and the necessity to use digital solutions at the same time). Furthermore, the tourism providers also need to make navigation in the digital space easier, and it might be a challenge for them to get their message through to their intended audience. Lastly, the Wadden Sea region, with its natural areas, is also well suited to cater for those tourists who seek ‘digital detox’, to escape from Wi-Fi, Internet, and wish to disconnect and unplug during their vacation.

**Possible consequences and implications for monitoring and data**

Incorporating digital systems and/or solutions for an easier process of booking, checking in, and registering visitors will also allow for the collection of data on visitor arrivals, and monitoring of visitor behaviour (what activities they do, where they go). Such data can then be used for improved decision-making regarding infrastructure development, maintenance of the area, as well as the development of tourism products and experiences, that could lessen the burden on congested areas, either spreading the visitors spatially to other parts of the region, or over different times of day/week or by providing digital/VR alternatives. Collecting data on how the tourists get information about the Wadden Sea, or when and where they book their stay, will also inform the providers on where they best could target their audience.

## Driving force no. 4: Travel Mobility

**Description of trend/force**

The fourth major driving force of change is related to the developments in travel mobility. There are increasing opportunities regarding electric, alternative, connected and autonomous vehicles, and there is a growing demand for more real-time, on-demand services. Further part of this trend is the emergence of multimodal transportation systems for seamless travel, with real-time information, booking options, etc., characterized by interconnected value chains, new commercial partnerships and collaborations.

**Possible impacts on tourism in the Wadden Sea Region**

Since most of the Wadden Sea region on the mainland is non-urbanized, rather rural, in a natural environment, implementation of public transport is obviously a challenge. Still, at certain times and places, considerable congestion occurs so there is a need to consider alternatives. Many of the islands have a limited capacity given by the capacity of the ferries, and this again creates queues and congestion on both sides of the connection, especially during high season. The ferries also have an impact on the environment, and in some places, they are already being substituted for electric versions. The destinations in the region need to consider installing charging stations for electric vehicles. When there are public transport options, it is important that they are interconnected with each other. The tourism stakeholders need to collaborate and coordinate their (boking) systems and services (e.g., event times aligned with ferry departure/arrival times), to make the travel and stay as seamless as possible for the tourists.

**Possible consequences and implications for monitoring and data**

Similarly, to the previous trends, connected vehicles (if legally possible), could be used for better monitoring of both visitor numbers, congested places, and visitor behaviour. Knowing whether people only use the car to access the area, but then bike/walk around while there for eight days could be used as a background for the development of long-distance alternative transportation modes to the region, to lessen the incoming traffic. On the other hand, knowing that people use the car daily while in the region to go to different parts of the destination, would provide reasons for the development of local alternatives, or 'just' better informing the tourists about the local hiking/walking and biking trails.

# 3. Assessment

Tourism represents a major economic force in the entire Wadden Sea region, accounting for total revenues of EUR 6.7 billion in the Netherlands, Germany and Denmark combined. For comparison: this figure is roughly equivalent to the revenue in the travel and tourism market of the whole national economy of Belgium in 2018, i.e. before the COVID-19 pandemic (www.statista.com).

This economic significance has to be taken into consideration when critically assessing tourism's role and

potential impacts on the Wadden Sea's OUV. Tourism numbers that exceed the local carrying capacity sometimes referred to as overtourism, pose a risk to ecologically sensitive environments. Carrying capacity has a social dimension, too: tourism cannot be successful if the local population opposes it, which means in turn that locals have to be able to participate in tourism-related decision-making and that the costs and benefits of tourism are distributed in a way that is perceived as fair by the affected stakeholders. Data for cross-country comparisons is currently not available; however, a study (www.ditf-fhw.de) on tourism acceptance in the German state of Schleswig-Holstein indicates that in 2021 only 10.7% of residents saw tourism in their respective communities as negative (the majority, 51.6%, rated tourism as positive, whereas 37.7% had a neutral or no opinion). These results suggest that tourism is generally well-received; however, there has been a slight decrease in these attitudes over recent years. The interests of stakeholders could be carefully balanced, which requires continuous (time) investments in local and regional multi-actor and multi-stakeholder cooperation – in line with the objectives/aims of the Trilateral Wadden Sea Cooperation (TWSC), the Wadden Sea Plan (WSP) and Ministerial Declarations. This is particularly relevant in the context of relatively high and increasing tourism intensity (ratio visitors-inhabitants), risk of pressures on the ecosystem, and possible (very) local over-dependency on tourism for socio-economic development. Potentially, more concrete objectives/aims and related measurable KPIs can be formulated to further stimulate multi-actor and multi-stakeholder cooperation.

Besides positive economic impacts, tourism also contributes to the quality of life of host communities. E.g., infrastructure and services for tourists, such as cultural attractions, hiking paths, spa facilities, public transport or lifeguard services at beaches, not only benefit tourists but also the local population. Finally, tourism, if well managed, can also contribute to environmental sustainability, indirectly (e.g. if alternative economic activities would be less sustainable than tourism), or directly (e.g., by raising awareness for sustainable development through well-designed environmental learning offers, such as national park visitor centres or guided ranger tours). To maximize the positive social and environmental impacts, next to economic impacts, multi-actor and multi-stakeholder cooperation are needed – again, in line with the objectives of the Trilateral Wadden Sea Cooperation (TWSC). Potentially, more concrete objectives/aims and related measurable KPIs can be formulated to further stimulate the positive impacts of tourism and recreation.

# 4. Recommendations

The recommendations presented in this section are based on 1) observations by the project team throughout the process of compiling this 2022 QSR on tourism and 2) inspired by the 'forces driving change' outlined in section 2.4. Recommendations for future monitoring and research as well as for management are given. Both aspects are important and should be given full consideration. Improving monitoring and research can only work when there is initiative/leadership, active coordination, and organization. This should not be overlooked or taken too lightly.

## 4.1. Recommendations for monitoring & research

- Thoroughly assess the differences in the QSR of 2004, 2009, 2017 and 2022. Per the so-called 'tourism-related parameter' a number of large differences occur, as can be seen in Table 2. Consider re-doing the analyses for the years if not consider creating timelines based on smaller (e.g. yearly) intervals.
- Update the Trilateral Monitoring and Assessment Programme (TMAP) to include parameters related to 'human use' in general and "tourism and recreation" in particular. Or even better, a focus on the visitor economy being the cluster of tourism, leisure, recreation, events, festivals and hospitality. Currently,

there is only one reference (page 11) in the TMAP Handbook (version 1.0, May 2008). Considering the socio-economic importance and possible impact of the visitor economy on the ecosystems of the Wadden Sea and its Outstanding Universal Value (OUV), further consideration is advised.

- Focus on collecting data and monitoring of a) visitors (next to the more traditional metrics such as tourist numbers and tourists' spending also include behavioural aspects such as satisfaction, Net promoter score (NPS), and qualitative feedback regarding their experience and – positive and negative - social and environmental impact), b) businesses (e.g. location, capacity, performance, economic vitality, bankruptcies, start-ups/emerging niche-products) and c) inhabitants (perceived impacts of and benefits from tourism, attitude and acceptance towards tourism, etc. (dashboard.nbtc.nl/)). Here, consider including a tourism acceptance score (TAS) by the local community in resident surveys (www.fsp.nl) – which are increasingly popular with regard to tourism.

- Include in the overview of statistics on tourism the Tourism Penetration Index (TPI). The TPI includes three variables: 1) visitor spending per capita of the population (economic measure), 2) average daily visitors per 1000 population (social measure), and 3) hotel rooms per square kilometre of land (environmental measures (www.sciencedirect.com)). The TPI can be used in monitoring as a possible 'early warning signal' to systematically assess the (over)dependency on tourism. Potentially, popular tourist destinations such as the islands of the Wadden Sea, run the danger of becoming "mono-economies" with an overdependency on the visitor economy, increasing their vulnerability and decreasing their resilience.

- Develop an 'early warning system' as a means to understand and define 'limits of acceptable change (LAC)'. Consider defining upper limits (and accompanying 'threshold limits') to monitor emerging overshoots and lower limits (and accompanying 'threshold limits') to prevent shortfall (in line with "Doughnut Economics" by Kate Raworth). Such an early warning system can inform decision-makers and support policy development and interventions.

- Explore and assess the possibilities of using emerging big data sources for monitoring and research such as cell phone data, mobile positioning data, GPS data, web scraping, and location-based history. Big data sources can potentially offer a wealth of data.

## 4.2. Recommendations for management

- Emphasize the importance of data collection and data availability at the local level, and do so at the level of the relevant authorities who have the task and/or mandate to improve. Still, too often, data is not available at local levels that allow for more detailed analyses that better fit destinations within the wider Wadden Sea region or that better fit sub-sectors within the industry of the visitor economy.
- Initiate and support knowledge exchange to create 'knowledge networks' regarding data collection and monitoring. Start by mapping the 'data landscape', mapping the relevant stakeholder network in particular for data collection and monitoring in the context of the visitor economy, and organizing network meetings to strengthen these knowledge networks.
- Support ongoing digitalization of the tourism industry not only to stimulate entrepreneurship and competitiveness but also for data collection. The more digitalized, the better able automized data outputs are possible e.g., for the (in the Netherlands legally required) registration of overnight stays (Dutch: 'nachtregister') and/or tourism tax.
- Explore and utilize EU-funding and (combined) national funding scheme to support data collection, and monitoring geared towards the Wadden Sea area and in close collaboration with stakeholders at the local and regional levels within the trilateral area. On the one hand to stimulate initiative/leadership, active coordination and organization as a condition or means for, on the other hand, improving data

collection, monitoring and, as the end result, better management information useful in processes of governance and decision making.

# 5. Summary

The Wadden Sea Heritage region is one of the most popular tourism destinations in Northern Europe, with tourism being a major economic pillar for the rural region. While foreign tourists account for more than 70% of all overnight stays in the Danish Wadden Sea region , they account for approximately 4% in the German Wadden Sea region and up to 20% in the Dutch region.

Due to different administrative contexts in the three countries, transnational statistics on tourism lack a common, uniform data basis, with each country collecting and making available the data they deem relevant. Overall, the Destination recorded above 46 million overnight stays in 2019, with 11,3 million in the Dutch, 27,2 million in the German, and 7,9 million in the Danish regions. However, the volume is probably considerably higher, as overnight stays in smaller accommodation establishments and private accommodation are not included in the official statistics.

Domestic tourists in 201941 accounted for the majority of the overnight stays in the German region (almost 96%), and the Dutch region (80%). In the Danish region, on the contrary, foreign tourists account for the majority of overnight stays with 72%. The average length of stay varies between four to five nights in the Dutch region, five to seven nights in the German region, and the estimated eight to nine nights in the Danish region.

The total tourism revenue in the Wadden Sea Heritage region appears to have increased in recent years estimated at EUR 6.7 billion, of which EUR 3.3 billion (50.6%) in the German region, EUR 2.2 billion (32.5%) in the Dutch region and EUR 1.2 billion (17.6%) in the Danish region.

Average daily spending varied between EUR 50-70 in the Dutch region, EUR 79 in the German region and EUR 60-124 in the Danish region. Tourism supports around 89,000 full-time jobs in the region, the Dutch region accounting for 47,7%, the German region for 40,1% and the Danish region for around 12,2% of the total.

Several general tourism trends provide the Wadden Sea Heritage region with new opportunities, as well as several challenges, that the stakeholders will need to address in the nearest future.

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