Inventory and Evaluation of Socio-Economic and Socio-Cultural Data in the German Wadden Sea Region

for the

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Summary

The main elements of this study are:

- An inventory of the socio-economic and socio-cultural data for the German Wadden Sea region;
- An analysis of developments and trends of important socio-economic and socio-cultural parameter on the basis of the data that have been processed in this inventory;
- The integration of the German Wadden Sea region in existing prognostic estimates (Population, economic development/value added, transport).

LAND USE

In the last decades the use of the land in the Federal Republic of Germany has been characterized by a trend towards an ever-increasing percentage of built- up and populated areas. Indicators for this trend are populated areas and traffic-areas, whereby areas such as building-areas, open areas, company premises as well as recreational and graveyards areas belong to the category of populated areas.
In the year 2000, the percentage of populated and traffic areas reached 12.3% of the total area.

The percentage of settlement areas and traffic areas in the Wadden Sea region increased from 13.3% in 1992 to 14.4% in the year 2000. Within the same period the percentage of the rural areas has decreased from 74.4% to 72.5%. The built-up areas and open spaces - as an indicator for the use of space by residential and commercial/industrial purpose- on the other hand are increasing, especially in the Kreise[1] of Niedersachsen and Schleswig Holstein, but also in the cities of Emden and Wilhelmshaven. The Kreise Dithmarschen, Nordfriesland, as well as Pinneberg hardly show any increase or even stagnation in the traffic areas.

All of the Niedersachsen Kreise along the Wadden Sea have growth rates that vary between 13.5 and 20.6%. The residential and traffic areas in the Kreis Aurich have risen by about one fifth within the last 12 years. Quite different is the development in the eastern Waddden Sea. Within the examined period of the last 12 years the residential and traffic areas in Nordfriesland dropped by 2.5%. The other Kreise have had moderate growth rates of under 10%. Of the cities, Emden and Bremerhaven show the highest growth rates. In Wihelmshaven the settlement and traffic areas dropped by 2.7%.

POPULATION DEVELOPMENT

In the year 2000, the German Wadden Sea region had an annual average of 3,691,451 inhabitants, about 166,000 more than in the year 1980. More than half were allotted to the cities: Hamburg (about 1,710,271 inhabitants alone), Bremerhaven, Wihelmshaven and Emden. From the year 1980 to 2000, of all the cities only Hamburg's population could show a positive growth rate. The other cities, mainly Wilhelmshaven, have had losses of inhabitants.
This leads to the conclusion that population increases in the whole Wadden Sea region are the result of a definite growth of the Kreise. At the top of the list is the Kreis of Stade with a growth index compared to 1980 (=100) of about 116. But also the Kreis of Nordfriesland, which had to cope with a strong loss of inhabitants until 1990, achieved a growth index of 102.

The different population developments in parts of the region, indicate, apart from rather global influences, the influence of different internal factors, e.g. the extent of the house building and the development of jobs in the region, as well as the experienced quality of life in the populated/ residential areas and the development of the rental costs etc..
The number of persons living in one household in the Kreise of Pinneberg, Friesland and Wesermarsch is smaller than on average (2.18) in Germany. Here the reasons can be of a very different nature. The number of persons per household is very small in Wilhelmshaven (1.74),

[1] Kreis/e = administration district/s above level of communities

Hamburg (1.86) and Bremerhaven (2.0). Most Kreise have a larger number of persons per household, whereby the Kreis of Wittmund is at the top of the list with 2.4.

Natural population development
In the Wadden Sea region 36,121 children were born in the year 2000, while 39,295 inhabitants died. The region has lost - without taking into consideration migration – 3,174 inhabitants. Although a gradual decline in the number of deaths could be experienced in the nineties, this trend has not been able to have a lasting effect on the population development, because the number of births also dropped again. A high percentage of the loss of inhabitants - 2,051 inhabitants – can be ascribed to the city of Hamburg, where the annual death rate is clearly higher than the birth rate. But also here the losses of the nineties have been reduced. In the Kreise, the deviation between the number of deaths and births is not that significant. The Kreis of Cuxhaven has had the greatest loss of inhabitants because of a surplus of deaths of 424 persons. The Kreise of Wittmund, Aurich, Leer as well as Stade gained inhabitants by a surplus of births.

The Kreis of Aurich has had the highest surplus of births per 1000. This correlates with a relatively large percentage of inhabitants of "birth-friendly" age groups, as well as a relatively small percentage of persons who are older than 65 years. The minor natural loss of inhabitants per 1000 inhabitants in the cities correlates with the high percentage of single households.

Spatial population developments
Migration across the Kreis borders in the Wadden Sea region has been predominantly a migration surplus. The most impressive migration figures can be noticed in Hamburg, where in the year 2000 there were 69,716 migrants on the one hand and 82,424 immigrants on the other hand. Of all Kreise which have had an increase in immigration (positives Saldo) , Pinneberg is at the top of the list with a gain of 2,248 inhabitants in the year 2000. A migration deficit can be noticed in the other three cities, of which Bremerhaven has had the highest loss by migration being 1,604 inhabitants.

However, the development of migration trends is remarkable. Increasing migrations and decreasing immigrations can be used a an early- warning indicator for adverse municipal trends (weak employment market, stressed housing market, declining quality of life), a high increase in immigration or a sudden decrease in immigration have to be questioned and possibly require decisions regarding the spatial planning policy (allocation of residential areas, layout of infrastructure etc.).

Summary population migration
By comparing the natural population data with the migration data, one can see which of the factors and to what extent they are influencing the development of inhabitants.
In the Wadden Sea region the on the whole positive development of inhabitants is attributed primarily to an increase in immigration in the region of Hamburg (especially in the year 2000), and in the Kreise of Pinneberg, Aurich, Leer as well as Cuxhaven. The natural development of the population only has a minor effect on the development of the inhabitants. Surpluses in deaths have only slightly slowed down the increase in the number of inhabitants. Only in Emden and Wilhelmshaven the surpluses of deaths and migrations add up to a noticeable loss of inhabitants.

Population perspectives
The whole Wadden Sea region has grown moderately in the period of the nineties. This growth trend will continue until 2005 according to the prognosis. Thereafter the population will be on the slight decrease. Until the year 2020 the level will be just below the one of 1995. On a smaller spatial scale, the perspectives of development vary a lot.

STRUCTURE AND DEVELOPMENT OF EMPLOYMENT

In the Federal Republic of Germany the number of employees who are subject to social insurance contribution at the place of work dropped by 10% from 1990-2000. This negative trend in the Wadden Sea region was outnumbered by Wilhelmshaven (almost minus 20%), Bremerhaven (ca. minus 13%) and the Kreis of Wesermarsch (more than minus 10%). Negative growth rates are also found in Emden and Bremen.
The Kreise as well Hamburg developed in a positive way. The Kreise of Aurich, Friesland and Stade and Leer achieved a definite increase in employment, Aurich (with about 18%), Friesland (ca. 11%, Stade (ca. 12%) and Leer (ca. 11%).

For the Wadden Sea region, the typical situation of the larger cities on the one hand and the more rural parts of the region, on the other hand , is confirmed. In all Kreise there are fewer jobs than employees[2] at the place of residence, whereas the cities distinctly have more employees at the place of work than at the place of residence. On balance the cities make up for the job requests with the help from the Kreise, whereby it needs to be emphasized that the migration of employees from the whole Wadden Sea region is not sufficient to cover the existing job offers. There are about 100,000 employees more at the place of work than employees at the place of residence. This means that the Wadden Sea region is a region with a surplus of commuters coming into the area. The metropolitan city of Hamburg is the main causer for this.

Because of the labour market situation, there are definitely more commuters out of all Kreise than into the Kreise, whereas commuting into the cities is done on a large scale. Especially high is the surplus of persons commuting out of the Kreis of Pinneberg and the surplus of persons commuting into the city of Hamburg.

The positive economic development around the turn of the millennium has also had positive impulses for the labour market of the Wadden Sea region. However its extent turned out to be different and except for Hamburg the numbers are below the German average.
This result emphasizes the conclusion, that the northern German coastal regions are structurally lagging behind in comparison, so that upswings can hardly reduce the mostly structurally caused unemployment.

Overall Sectoral Economic data
In Emden (with about 50% of the employees) and in the Kreis Wesermarsch (with about 45%) the processing industry plays an outstanding role. This is mainly attributed to the factory of VW, which is producing in Emden. In the other regional parts the processing industry only has about 18% -30% of the employees.

In a few Kreise, the building industry has above average rates of employees (referring to the Land[3] Niedersachsen). The trade, which is strongly determined by the wholesale trade, has similar or even higher rates of employees than the Land Niedersachsen (except for the cities of Emden and Wilhelmshaven and the Kreis of Wesermarsch). In the Kreis Aurich, the hotel and restaurant industry is clearly above Land average
Except for Emden, which is determined strongly by its industry and where there is less administration and service situated, the cities have a rate of more than 40% of the jobs in the service sector– incl. administration- and Wilhelmshaven even more then 50%. In the Kreise 30-40% of all jobs are in the service sector or administration.

In the Wadden Sea region the processing industry is especially represented in Emden, in the Kreis of Stade and the Kreis of Wesermarsch, the building industry in the Kreise of Stade and Wesermarsch and public and private services in the Kreise of Cuxhaven and Stade.

The rate of employees of the primary sector, being the agriculture and forestry, livestock husbandry and fishery, is relatively high in the Kreise of Pinneberg, Dithmarschen and Cuxhaven (referring to the total distribution in Germany).

The secondary sector with the energy and water supply, mining, processing industries and building industry is ranking highest in Emden and the Kreis Wesermarsch in the second highest category, the Kreis of Steinburg and Stade are in the middle (average) category. In the remaining parts of the Wadden Sea region (the metropolitan city of Hamburg as well as the Kreise in Nord –und Ostfriesland which are benefiting from tourism) the number of jobs in the industry is below average.

The tertiary sector on the other hand, with all other branches, which comprise all other non-producing industries, is– contrary to the pattern in the secondary sector- represented above average in Hamburg and the Kreise Nordfriesland, Wittmund and Aurich, but also in Dithmarschen, Pinneberg, Stade, Cuxhaven and Leer, which are ranking in the second highest category.

[2] Data are for employees subject to social insurance contribution
[3] Land/Länder = Federal state/s

SUPPLY OF HOUSING

The stock of houses in the sub-regions of the Wadden Sea region has been clearly on the increase between the years 1986 and 2000. This increase of supply has been triggered off by:

- The increase of the population of the past years as well as
- The continuing rise of the specific demand for living space (m^2 living area per person).

In all Kreise, the form of housing predominantly used is, one and two-family houses. The exception is the Hamburg surrounding Kreis of Stade, where more than 90% of the residential buildings comprise of only 1 or 2 units. At the same time, the Kreise show a distinctly higher availablity of living space per inhabitant. In the 6 Kreise Nordfriesland, Dithmarschen, Cuxhaven, Friesland and Aurich the average availability of living space is, with 42.5 m^2 per person, ranking at the upper fifth of the German distribution.

TOURISM

The sub-regions determined most strongly by tourism, are the Kreise of Nordfriesland in Schleswig-Holstein and Wittmund in Lower Saxony, where there are more than 300 guest beds per 1000 inhabitants. A clearly higher bed density is found in the Kreise of Aurich and Friesland at the Ostfriesland Wadden Sea coast. The Kreise Cuxhaven, Dithmarschen, Leer and Wesermarsch have also figures above average.
The main carrier of tourism are the northfriesian and eastfriesian Islands. The use of tourist infrastructure - measured in numbers of overnight stays - amounts to about 25 million overnight stays annually in the whole of the Wadden Sea region with a slightly increasing trend. The average capacity utilisation of the Wadden Sea region has been well about 35% in the past years. The distinct holiday resort regions are close to this average value. A positive exception, with higher results, is the city of Hamburg, of which the overnight stay situation is determined by business and official journeys, as well as weekend city-tourism with an average stay of less than two nights. The other cities, as well as the Kreise around Hamburg (Pinneberg, Steinburg and Stade), have a similar guest structure, (but less important as destination of city- tours) which is documented by short stays

In the holidays resorts, the average stay in the year 2000 was 7.6 nights in the Kreis Nordfriesland and 4.7 nights in the Kreis Wesermarsch. In the year 2000 about one third of all overnight stays in the Wadden Sea region took place on the Eastfriesian Islands. The stay on the holiday islands is longer and the level of capacity utilisation is higher than average. Also in comparison with the Kreise to which the islands belong, it becomes clear, that the islands are the backbone of the regional tourism. However, the limits of capacity utilisation and demand seem to have been achieved, because in the course of the nineties, there have been practically no increases.

TRANSPORT

Level of motorization

In the period between 1980 and 2001 there has been a tremendous increase in motorization. From a spatial perspective, there are clear differences in the number of cars per 1000 inhabitants. Whereas the number for the Wadden Sea region was 354 cars/1000 inhabitants in 1980, it increased to 486 cars /1000 inhabitants in the year 2001. The development coincides with the German trend.

Even on a small scale there are huge differences. The number of cars per 1000 inhabitants in Bremerhaven is only 408, whereas the Kreis Nordfriesland is at the other end of the spectrum with a number of 551, being far above average. This difference between the cities and the countryside is typical for the German individual motorization. In the rural areas mobility is almost exclusively guaranteed by motorcar. Local transport systems in rural areas can hardly provide an attractive transport supply at reasonable costs.

Transport density on the major roads
Results for the Kreise in the Wadden Sea area have been selected from the results currently available from the road traffic count of the year 2000.

Passenger traffic at sea
With a total number of about 18.6 million passengers the mainland connections to the respective islands are, as expected, dominant (Lower Saxony: 10,7 passengers, Schleswig-Holstein North Sea: 6.1 Mio passengers). Transport of passengers to ports outside Germany only plays a minor role in Lower Saxony and in the North Sea ports of Schleswig-Holstein with a proportion of about 3.1 % in total. Hamburg and Bremen achieved 32% and 24% of the total number of passengers transported at sea in the year 2002.

Regional air traffic
Transport to the North Sea Islands is taking the centre stage of the regional air traffic, done on a commercial basis. There are distinct differences in the flight intensity between the islands. In the year 2001 the islands of Sylt, Juist and Wangerooge had between 10,000 and 100,000 passengers. The airports on the mainland normally have destinations on several islands. Of these, the highest numbers of passengers were achieved in 2001, in Norden and Harle.

Development and forecast for freight traffic
As in the whole of the German freight traffic sector, the road transport is dominating in the area examined.
Transport by rail only plays a subordinate role, except in the harbour hinterland transport (especially for Hamburg and Bremerhaven), because of an extensively reduced rail network. Inland shipping only has market shares (partly a higher percentage than rail transport) where connections to waterways are available (mainly the river Elbe, Weser and Ems).

Especially noticeable is the great importance of harbour transport to the hinterland in the relevant cities or Kreise. In Bremerhaven, this segment even exceeds the transport between the cities and the villages in the Kreise, outside the harbour. The container, as a classic unit for transport at sea-measured in the grade of containerisation – only plays a role in harbour transport.
The forecast is a continued intense growth, especially for this part of the market. According to this prognosis, all transport carriers will have higher transport figures in the year 2015. Especially the road transport will benefit above average.

Turnover of the seaports in the Wadden Sea
The main development tendencies can be summarized as follows:

- For the German North Sea ports there is a continued danger of competition shifting into the direction of the Western ports.

  The Dutch and Belgium ports will also take measures to secure their market position in the coming years.
- Increases in the transport of bulk-cargo in German ports are viewed as rather limited, despite the potential profits over the past years. Very unlikely are also increases in the turnover of conventional general cargo.
- Growth potential for the German North Seaports is seen in the handling of containerised goods. Reason for this is the increase in global economic networks, which has already led to a far-reaching globalisation of markets for goods and to the internationalisation of the production.

Significance of the seaports for regional employment
Based on the absolute number of employees, the port of Hamburg, as well as the ports of Bremen and Bremerhaven, are of outstanding significance in comparison to the other seaports of the German Wadden Sea region. In Hamburg and Bremerhaven also the indirect impacts on employment are of a greater significance because of a high proportion of container transport.

With a proportion of just under 22% of the total number of employees in the Land of Bremen and Bremerhaven, the ports of Bremen are at the top of the list, followed by the port of Hamburg with almost 18%. The other seaports follow at quite a distance. With proportions of 7.5% (Brake, Nordenham), 6.7% (Emden) as well as 4.4 % (Wilhelmshaven) the significance of the seaports for the local regional employment market can definitely not be considered as negligible. Considering the results of the turnover forecasts available, the number of employees who are dependant on the port, will increase ever more in all of the examined seaports in the period 2000 to 2020.

With a generally stagnating number of employees this tends to result in a further increase of the dependency of the regional employment markets on the ports.

WELFARE- SOCIAL SUPPORT (FINANCIAL)

The favourable economical development at the end of the last decade resulted in a decreasing number of persons receiving social benefits.
Above average is the quota of women in the cities of the persons receiving social support. Presumably, the majority of single parents (mostly women) is concentrated in the cities, for whom the chances to enter employment are rather limited and who are therefore dependant on the state support.

Noticeable is also the above average proportion of foreign residents receiving social support (referring to their share in the number of inhabitants). However the figures for the latter in the Wadden Sea region are below the German average (except in Hamburg), amongst other things because of a lower unemployment rate.

ECONOMIC DEVELOPMENT/VALUE ADDED

The sectoral structure of the Gross Value Added varies a lot in the sub-regions of the area under investigation. Agriculture and forestry, a well as fishery, contribute noticeably to the Gross Added Value in the Kreise only. In Emden and in the Kreise of Wesermarsch and Stade, the industry has proportions above average. Except in Emden, the services sector is the most important economic sector everywhere. This sector is especially powerful in the metropolis of Hamburg but also in the Kreis of Nordfriesland. The latter is depending, at least partially, on the very strong local tourism sector.
Expectedly, the cities of Hamburg, Bremerhaven and Wilhelmshaven have a high added value (measured in Gross Added Value per inhabitant). However, Wilhelmshaven is showing negative growth rates. As measured by this indicator, the east Frisian Kreise turn out to be especially weak regions. Of the Kreise with an added value below average, Wesermarsch has the strongest development dynamics.

Forecast of economic added value
The forecast it is based upon a Germany- wide prognosis study. When summarizing all spatial planning regions (being the smallest spatial unit in this study), which contain area units of the German Wadden Sea, all sectors show an annual growth rate of the added value of 1.9% in the period of 1996 to 2025, which is slightly below the average development in the federal territory. The sectoral development perspectives are estimated to be similar for the whole of the federal territory. An even worse development in comparison to the German average is expected for the sectors agriculture (-0.8%), and regional authorities as well as social insurance institutions (-0.3%).

The average annual increment of the gross value added (again for the period of 1996 to 2025) in all area units of the whole Wadden Sea region is 1.8%, which is therefore insignificantly lower than in the relevant spatial planning regions from the prognosis study (1.9%).

Results of model calculations show growth rates above average in Hamburg (1.9), and the Kreise close to Hamburg, being Pinneberg and Stade (each with 2.4%) as well as the city of Emden (2.0). The development in the Kreise Wesermarsch and Cuxhaven (each with 0.9%), in Bremerhaven (1.0) as well as the Kreis of Wittmund (1.3%) will be clearly below average

Model calculations on the development of employees in the Kreise and in the municipalities of the Wadden Sea region result in a drop of 4.7% in the total number of employees in all relevant area units in the period of 1996 –2025.

RESOURCES OF THE HEALTH CARE SYSTEM

With respect to the resources of the health care system (Hospitals, medical centres, chemists) Germany is quantitatively well equipped. Applying the various key data to the sections/parts of the examined area, distinct differences in the level of health care become apparent. Thus the specific health care figures (e. g. Specialized doctors per inhabitant) in urban areas are normally higher than in the rural areas. It does not seem admissible, on grounds of the figures, to draw the conclusion that this is resulting in actual health care deficits or is leading to insufficient health care in certain parts of the region.

SCHOOL SYSTEM[4]

The evaluation of certain key data regarding the general education school system for the regional parts of the Wadden Sea area leads to some remarkable results:

- The number of pupils per 100 inhabitants varies around the German average of 12.0 pupils per 100 inhabitants. In Hamburg it is very low, whereas it is clearly above average in the Kreise of Aurich and Leer. The latter is characterized by an especially “young” population.
- The proportions of foreign pupils vary with the share in the population in the regional parts. Worse starting conditions of foreign children are reflected in their high proportion at Grund and Hauptschulen.
- The share of pupils at Gymnasien, Grund and Hauptschulen also varies with the school equipment/the choice of schools in the regional parts. The cities, being the central locations, are contributing above average to the regional choice of secondary schools of a higher standard. This is reflected in a higher number of pupils at Gymnasien.
- Striking are the structural differences in graduation between the Länder, which could have its reason in school politics. In the Länder of Schleswig- Holstein and Hamburg the number of pupils graduating from the Realschule is below average, whereas there is a larger number of pupils graduating from Hauptschule. In Niedersachsen and Bremen, on the other hand, clearly more pupils are graduating from Realschule with a tendency of fewer graduations from the Hauptschule. As far as the graduation from Gymnasien is concerned, spatial differences are likely to result from different vicinities to the centres and school equipment.

[4] The **German secondary school system** is subdivided into three different grades and follows after the first four school years at the Grundschule (basic school), which all pupils have to attend.
Hauptschulen: low standard secondary schools
Realschulen: high standard secondary schools
Gymnasien: grammar schools (Graduation = access to university)