Assessment of the status, development and diversification of fisheries-dependent communities

Rügen Island Case study report

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Acronyms

ACFA	Advisory Committee on Fisheries and Aquaculture
BLE	Federal Centre for Agriculture and Food
CFP	Common Fisheries Policy
EU	European Union
FTE	Full Time Equivalent
GDR	German Democratic Republic
GT	Gross Tons
ICES	International Council for the Exploration of the Seas
IUU	Illegal Unreported and Unregulated (fishing)
kW	Kilo Watts
TAC	Total Allowable Catch

This report has been prepared through a joint collaboration between Alyne Delaney (Innovative Fisheries Management, Aalborg University), and Martin Zbicinski, (Johann Heinrich von Thünen-Institut) with the active support of community stakeholders. The authors acknowledge the important role played by local stakeholders in providing both the quantitative data and the qualitative information presented in this report. This support has been critical in generating primary data not previously available for the Rügen Island area.

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1. Introduction

1.1 General description

Rügen Island was selected as a case study looking into socioeconomic dependency in fisheries communities because it represents a rural and isolated community which also has the highest quantity of fishing vessels of all administrative districts in the Federal State of Mecklenburg-Western Pomerania. The fishery has given historic distinction to the culture of the island and still plays an important role today. Fishery sites and small ports are located in all parts of the island's coasts, but as they strongly connect, the whole Rügen Island can be seen as an associated fishery area. Due to the rugged coastline with its peninsulas, inner coastal lagoons and backwaters along this coastal area of the Baltic Sea, the fishery is mainly artisanal, i.e. fishers using fishing vessels with less than 12 meters and a moderate income; more than 800 of the 956 fishing vessels operating in Mecklenburg-Western Pomerania are un-decked vessels with a length less than 12 meters.

A modern fish processing facility in Sassnitz-Mukran attracts foreign visitor vessels with a considerable landing volume. Nevertheless due to reasons of profitability (increasing energy costs, low fish prices or its volatility as well as no significant increase in landings) and future perspectives the number of fishers and vessels is declining year by year. In this regard there are initiatives, mostly supported by means from the European Fishery Fund, to diversify the fishery sector. Especially the linkage of tourism and fishery sites might be a promising combination which may bring advantages for both sides.

State	Mecklenburg-Western Pomerania	Schleswig-Holstein
Capital	Schwerin	Kiel
NUTS-Level-II	DE8	DEF
Area	23,174 km^2	15,763 km^2
Population	1,694,600	2,834,305
GDP	31 billion € (2005)	69 billion € (2005)

Source: Delaney 2008[1]; WIKIPEDIA (2007)

Table 1. Overview of the two German Baltic states

1.2 Location

Rügen (lat 54° 25 N, long 13° 24 E) is located in the Baltic Sea off the coast of Mecklenburg-Western Pomerania, one of two federal states bordering the Baltic Sea. It is the sixth largest in size and least densely populated German state (Table 1). To the east, Mecklenburg-Western Pomerania borders Poland, and in the west Schleswig-Holstein. Rügen is Germany's largest island. It makes up the principal part of the Rügen District, which also includes the islands Hiddensee and Ummanz, as well as several small neighbouring islands.

[1] Delaney, A. "Profiling of small-scale fishing communities in the Baltic Sea: A Study requested by the European Commission. December 2008.

The Rügendamm Bridge which connects the island by road and rail with the city of Stralsund on the mainland crosses over the Strelasund.

Rügen has an area of 926.4 km², or 974.56 km² if all small islands are included.[2] [3] The highest elevations are on the Jasmund peninsula: Piekberg (161 m) and Königstuhl (117 m). The island and the adjacent islands are administered as the Landkreis Rügen (administrative district). Subordinate to the Landkreis Rügen (NUTS DE80H) are the administrative offices (Amt) in Bergen auf Rügen, West-Rügen, Nord-Rügen, Mönchgut-Granitz with an overall 42 municipalities, four of which have town status (Bergen, Garz, Putbus and Sassnitz).[4]

Figure 1. Map of Rügen Island[5]

[2] Wurlitzer, Bernd (2006): Rügen, 11th ed., Mair Dumont, Marco Polo, p. 15

[3] Öffentlich-private Partnerschaft Rügen (2009): Lokale Entwicklungsstrategie zur Umsetzung der Proiritätsachse 4 des Europäischen Fischereifonds Fischwirtschaftsgebiet Rügen, p. 2

[4] Jendricke, Bernhard (2008): Rügen, Hiddensee, 3rd ed., DuMont, p. 11

[5] Institut für Ländliche Räume, Wald und Fischerei (Johann Heinrich von Thünen-Institut)

1.3 Key geographical characteristics of the community

Rügen's core landmass, Muttland, is surrounded by several peninsulas. To the north lie the peninsulas of Wittow and Jasmund, connected to each other by the Schaabe land bridge and to Muttland by the Schmale Heide land bridge, a dam at Lietzow and the Wittower Fähre ferry. The northern peninsulas are separated from Muttland by several Bodden (bodies of water), the largest of which are Großer Jasmunder Bodden and Kleiner Jasmunder Bodden. Major peninsulas in the south are Zudar and Mönchgut which both face the Bay of Greifswald.

Of Rügen's overall 574 km-long coastline, 56 km are sandy Baltic Sea beaches, 2.8 km are sandy Bodden beaches and about 27 km are natural beaches.

The climate is in the temperate zone. The winters are not particularly cold with average temperatures in January and February of 0.0 °C and summers are cool with a mean temperature in August of 16.3 °C. There is an average rainfall of 520–560 mm and approximately 1800–1870 hours of sunshine annually.

In the 12th century the area was conquered by Denmark and became the Danish Principality of Rugia. The principality underwent Christianisation and German settlement in the course of the Ostsiedlung. The former monarchs became Danish princes of Rügen. In 1325 Rügen was inherited by the Duchy of Pomerania. Rügen was a part of Swedish Pomerania from 1648 to 1815. Under Gustav IV Adolf of Sweden the town of Gustavia was constructed on the Mönchgut peninsula, but was abandoned during the Napoleonic Wars. Afterwards it became a part of the Prussian Province of Pomerania. In 1816 the first bathing resort was founded at Putbus.[6] Later more resorts were established, and Rügen remained the most famous holiday resort of Germany until World War II.

In 1936 the first bridge connecting Rügen with the mainland was constructed (Rügendamm), replacing the former ferry shuttles. In 2007 a second bridge, Rügenbrücke, was built to replace the first. Rügen was a major summer holiday destination in the German Democratic Republic and remained a holiday island after German reunification.[7]

[6] Küster, Hansjörg (2004): Die Ostsee, eine Natur- und Kulturgeschichte (2 ed.). C.H.Beck. p. 300

[7] Tourismusverband Rügen e.V., Tourismuszentrale Rügen GmbH

2. Demographic aspects

2.1 Population and population age structure

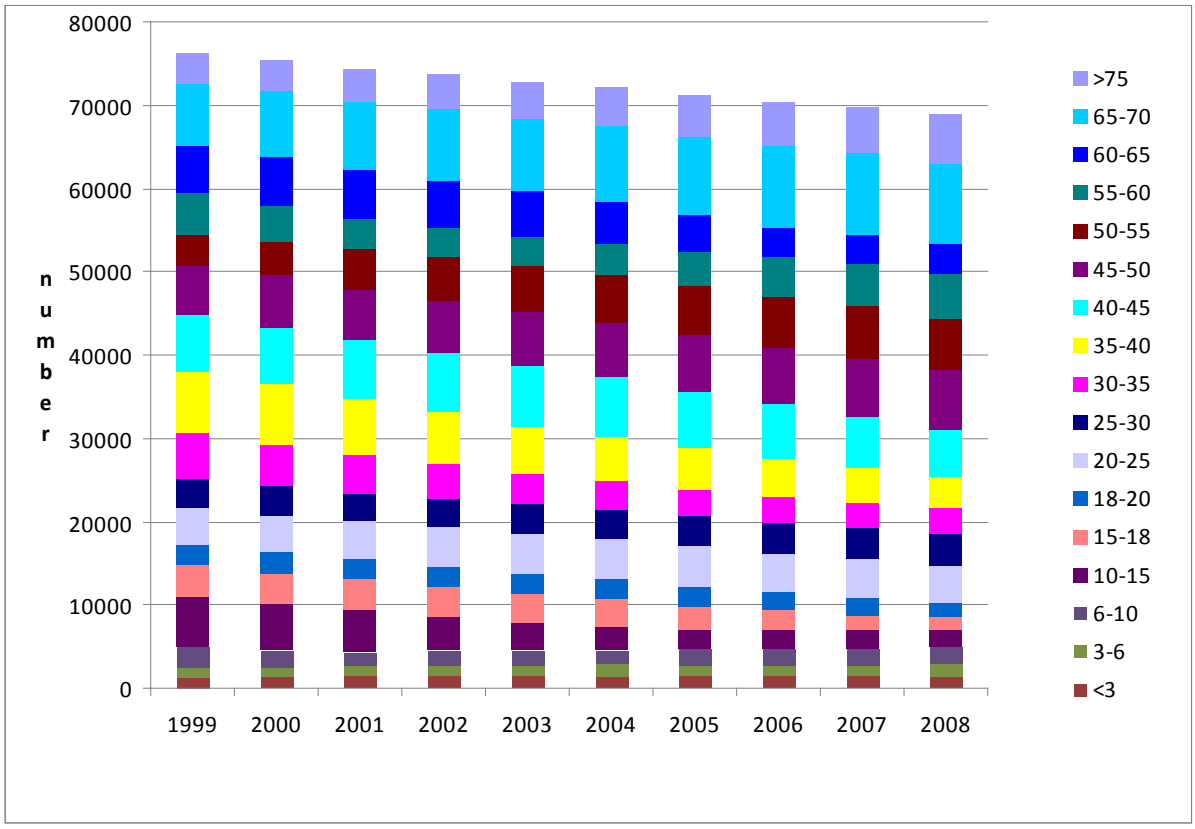


Figure 2. Population and age structure of Rügen Island, 1999 to 2008

The population of Rügen has decreased constantly from 75,386 (2000) to 68,872 in 2008. Since 1990, the number of people living on the island has fallen by 13,900 or 17 %. Compared to the average population decline of Mecklenburg-Western Pomerania (11 %), Rügen has lost a higher percentage of its inhabitants. The reason for the decline was predominantly a negative migration balance and to a less extent a lower birth rate in comparison to the death rate.[8]

2.2 Ethnicity and migration

The population of the area is mainly German. Only 1.9 % of the total population has a different nationality. The national average of foreign inhabitants is about 8.2 %. Furthermore, the trend shows that the foreign population has decreased (from 2008 to 2009 by 3 %).[9]

Rügen, like many communities of the federal states of the former East Germany, has to deal with negative migration; particularly the combination of the movement of young professionals

[8] Amt für Wirtschaft und Kultur, Rügen

[9] Statistisches Landesamt Mecklenburg-Vorpommern

(brain drain) to other areas and larger cities of the country and an ageing community is a problem of high priority.

3. Economic aspects

Rügen's economy is highly dependent on the service economy, especially on tourism. Since the 1990s the primary and secondary sector declined proportionally to the service economy. This development will very possibly go on in the future, especially in regard of an ageing population with the outcome of limited private sector investments.

3.1 Importance of economic activities

Mainly because of the growing tourism sector, Rügen's economic output rose between 2003 and 2007 from 1,091 Billion Euros to 1,163 Billion Euros.

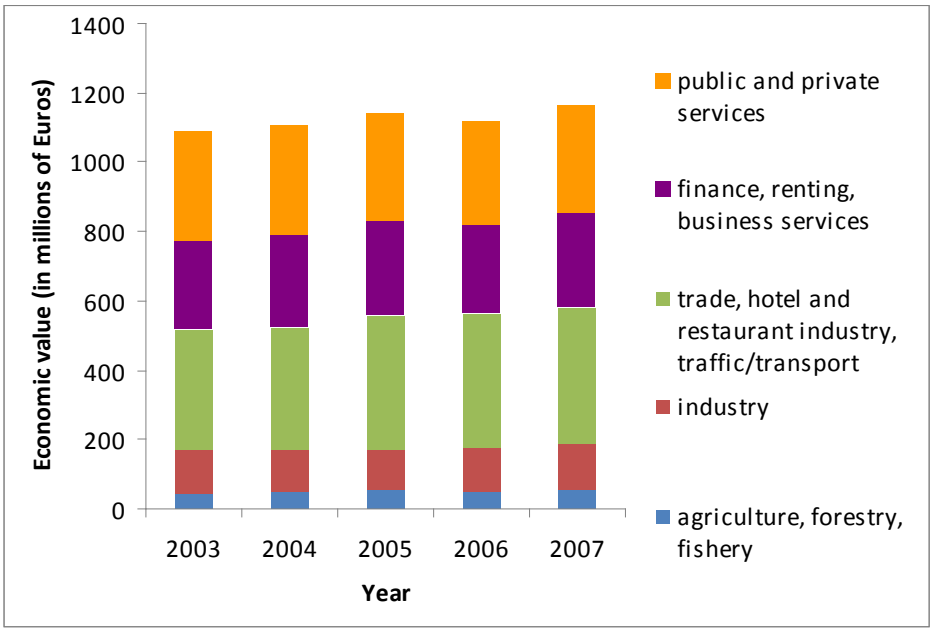


Figure 3. Turnover by different sectors on Rügen Island, 2003 to 2007

The broad breakdown of the economic sectors illustrates the importance of the tourism sector (represented by the trade, hotel and restaurant industry, as well as traffic and transport) where nearly 25 % of the total work force is employed. The whole service economy accounts for 83.8 %, the primary sector, which includes the fishery sector for 5.2 % and the industry for 11 % of Gross Value Added. In 1991 the values were 73.1 % (services), 8.3 % (agriculture, forestry and fishery) and 18.6 % (industry).[10] The negative development in employment in the primary sector is even more evident: its proportion fell from 23 % of the employed work force in 1990 to 4.4 % in 2007.

Because of a relatively small manufacturing sector and the lack of infrastructure, the region is classified as economically underdeveloped.[11] While the average national disposable

[10] Statistisches Landesamt Mecklenburg-Vorpommern, 1991-2007

[11] Bundesinstitut für Bau-, Stadt- und Raumforschung, Raumordnungsbericht 2005, p. 151

income per person in 2006 was 18,135 Euros, Rügen reached a significant lower average value of 14,152 Euros (the lowest average of all federal states of Germany).[12]

The tourism sector, with about 5,574 million overnight stays in 2008, grew strongly since 2006 and boosts the islands income. Despite its dependence on seasonality and a sharp decline in overnight stays in the second half of 2009 by 7 %, mainly resulting from the economic downturn, this economic sector holds great potential and is expected to grow sustainably in over the next years. Increasing accessibility to the island will be of crucial importance for Rügen's future development and thus demands investments in regional infrastructure, e.g. train and flight connections. [13]

3.2 Employment and unemployment

In 2008 21,491 people were full-time employed across Rügen. At the same time, 5,896 people were unemployed, which represents an unemployment rate of 15.1 %. These unemployment figures are considerably higher than the national average of 8.1 % (2010). Looking at the statistics, the situation on the labour market appears to have improved significantly since 2003 with an unemployment rate of 22.8 % but this can be explained by two factors: first, given the seasonality of the important tourism sector, the employment rates fluctuate throughout the year. And more importantly, part of the decline in unemployment must be attributed to out-migration rather than an improvement in employment opportunities.

There are no current data for 2010, but it is believed that public compensation absorbed much of the impacts of the economic downturn in 2009.

Figure 4 shows the evolution of employment and unemployment in Rügen from 2003 till 2008. Figure 5 shows a breakdown of employment in Rügen by the main economic sectors. After the tourism sector, it is the public and private service economy and the trade sector which employ a high percentage of the work force in the region.

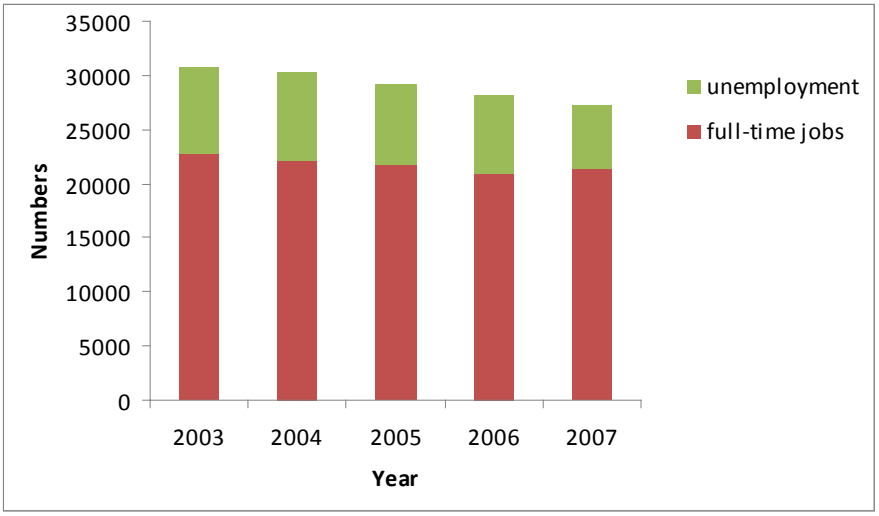


Figure 4. Employment and unemployment figures on Rügen Island[14]

[12] Statistisches Bundesamt Deutschland

[13] Industrie- und Handelskammer zu Rostock (03/2010): Standortpolitik, Spezial Rügen

[14] Statistisches Amt Mecklenburg-Vorpommern (2009): Statistische Berichte 1991-2007

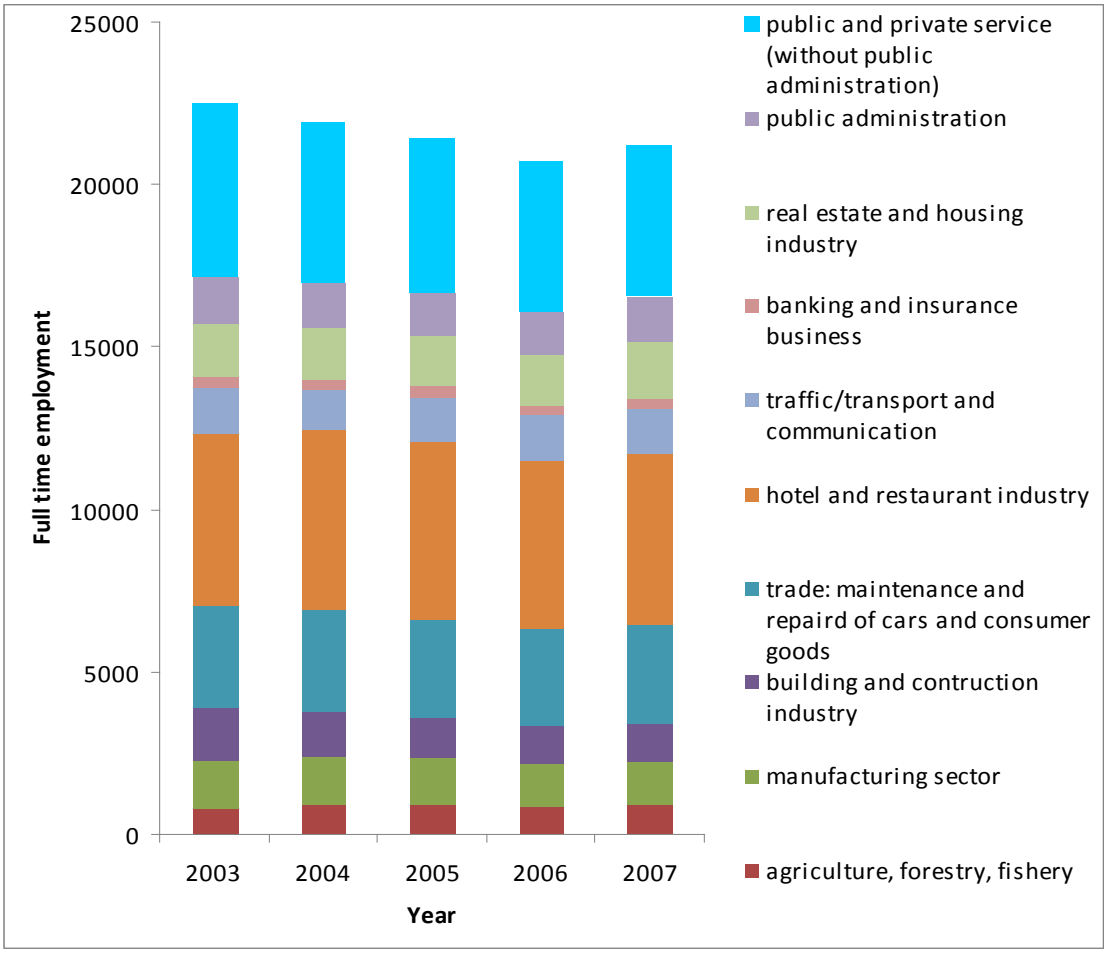


Figure 5. Employment on Rügen Island by sector, 2003 to 2007[15]

The fishery sector has a long tradition in Rügen and is carried out offshore (deep-sea) and inshore. There is no official number of fishers in the area, but there are two producer organisations which dominate the fishery sector. These are the central marketing cooperative "Rügenfang e.G." and the producers' organisation "Hochsee- und Kutterfischer GmbH". In 2008 around 130 fishers were organised in these two associations.[16] In 2002 the "Rügenfang e.G." alone employed nearly 130 people, which suggests a steady decline of employment in the catching sector. There are also no figures about part- time fishing, but it is likely to rise as the number of full-time fishers' declines.

3.3 Infrastructure

Rügen has 2 bridges and a car-ferry which crosses the Strelasund and connects the island with the mainland. The island's accessibility improved profoundly after the opening of the second bridge "Rügenbrücke" in 2007, which can be used by cars day and night. A rail-link crossing the "Rügendamm" bridge connects the city of Stralsund with Bergen and Sassnitz.

[15] Statistisches Amt Mecklenburg-Vorpommern (2009): Statistische Berichte 1991-2007

[16] Öffentlich-private Partnerschaft Rügen (2009): Lokale Entwicklungsstrategie zur Umsetzung der Proiritätsachse 4 des Europäischen Fischereifonds Fischwirtschaftsgebiet Rügen, p. 13

Given Stralsund's (where the 2 bridges connect the city with Rügen) easy connection to the major motorway A20, transport time by car to Bergen is about:

- 3 hours for Berlin
- 2.5 hours for Lübeck
- 3 hours for Hamburg

There are also regular ferry services from Sassnitz-Murkan to Trelleborg (Sweden) and the island of Bornholm (Denmark).

Rügen has also a small regional airport, which is located in Güttin 8 km south of Bergen. So far it only provides regional services such sightseeing flight with small Cessna aircraft. The nearest international airports are located in Rostock (140 km away), Szczecin in Poland (about 210 km), Lübeck (about 230 km), Hamburg (about 300 km) and Berlin (about 300 km).

Rügen has 53 ports of which 22 are pure sports- and yacht ports and 31 offer water berths for visitors.[17] The island's largest port of Sassnitz is situated on the eastern side of the Isle of Rügen. It is the largest rail ferry port in Germany and the only port in Europe which can handle broad-gauge Finnish and Russian rail cars.[18]

The decrease in population stems from not only financial and employment reasons but also from cutbacks of different social infrastructure like schools and hospitals. It must be taken into account that in order to limit further out-migration of young people there is a necessity for development of new educational and leisure facilities.

3.4 Local development plans

Concepts and strategies

The strategy of the "Regional-Leitbild Rügen" (Rügen regional concept note) was passed in 2007 and has the following broad goals:

- Economy: a sustainable economic development which focuses on the combination of economic success, social and ecological responsibility. The aim is to attract new companies, secure existing jobs, to open up for potential new technologies and to offer training opportunities for young people.

- Tourism: increasing competitiveness of Rügen's most important economic sector by cutting down infrastructural deficits. The aim is to boost Rügen's profile in the fields of nature, culture, health and maritime tourism.[19]

- Trade/Manufacturing/Industry: more effective use of locational advantages, especially in Sassnitz-Mukran as an European traffic junction, and the encouragement for a growing retail industry.

[17] Landkreis Rügen, Tourismusverband Rügen

[18] Fährhafen Sassnitz GmbH

[19] http://www.ruegen.de/fileadmin/user_upload/content/Tourismusverband/Ueber_uns/Leitbild_TVR.pdf

- Agriculture, forestry and fishery: a sustainable fishery and agriculture and the increase of ecological production. Especially the security of the fishery sector is important for economical and touristic reasons. Additional incentives and developments to increase local fish processing capacity and its commercialisation are on top of the agenda.[20]

The strategy only addresses fisheries with tourism-related objectives. These are, in detail:

- Construction of a historic fishery cottage for fish salting and smoking and for exhibition purpose

- Construction of a shelter style museum to present the traditional inshore fishery in Neuendorf/Hiddensee

- Renewal of the museum of local history in Mönchgut and a concept for a steady exhibition, not just focusing on the fishery

- Construction of a farmer-fisher-house in the shape of the local design - it will be used as an exhibition building for the inshore fishery museum in Baabe.

In 2009 the regional management announced the local development strategy for the implementation of the Priority Axis 4 of the European Fishery Fond for the fishery area of Rügen. With the introduction of the Priority Axis 4 "Sustainable Development of Fisheries Areas" the European Commission intends to follow up on the successful development of the former LEADER (for Rügen between 2002 and 2006) and LAG initiatives.[21] The main aim is to place fisheries firmly within a local development context by

- Securing and further develop the fishery and as a living tradition

- Consolidating the synergetic effects of fishery and tourism

- Strengthening commercialization of local fish products and stimulating the diversification of the fishery sector in order to increase its profitability

- Taking corporate responsibility for the environmental impacts which require a sustainable fishery

The total eligible public expenditure of the programme Priority Axis 4 (2007-2013) for the federal state of Mecklenburg-Western Pomerania amounts to about 7.2 million € with EU assistance through the European Fisheries Fund amounting 5.448 million € (75 % of the total sum).[22]

4. Fisheries and aquaculture sub-sector

The main characteristics of the catching sector in Rügen include a large coastal/inshore fishing fleet (vessels up to 12 m length). These vessels are registered in 27 different ports

[20] Regional-Leitbild Rügen (2007), http://www.landkreis-ruegen.de/ikiss/session_bi/pdf/00015411.pdf

[21] Öffentlich-private Partnerschaft Rügen (2009): Lokale Entwicklungsstrategie zur Umsetzung der Proiritätsachse 4 des Europäischen Fischereifonds Fischwirtschaftsgebiet Rügen, http://www.kreis-rueg.de/media/custom/267_1894_1.PDF?La=1&object=med|267.1894.1

[22] http://www.kreis-rueg.de/media/custom/267_1876_1.PDF?La=1&object=med|267.1876.1

around Rügen's coast, mainly in the ports of Sassnitz, Gager, Lauterbach, Thiessow, Breege and Vitte. An additional 13 ports and landing stations are used temporarily to land catch.

Sassnitz is the most important fishing port in Rügen. It is home to numerous large-scale fishing vessels (mainly up to 27 m) and one of Europe's largest fish processing plants in Sassnitz-Mukran with a capacity to filet about 50,000 tons of fish annually.[23] As local catching volume doesn't suffice to charge to capacity, the main fish raw material comes from foreign fleets fishing in the Baltic Sea and North Sea.

Aquaculture and freshwater fishing are of no importance.

There are no official figures on volumes and value for the fishery sector as a whole. But a detailed analysis of each parts of this sector gives a certain indication of its impact in the region.

4.1 Details of the local fishing fleets

Rügen traditionally supported a significant fishing fleet with a variety of boats mainly for coastal fishing using passive gears. Table 1 summarises the fishing fleet and its distribution of gears by fleet segments. It comprises of 308 vessels (2009), of which 250 are used by commercial fishermen (main income) and the others are part-time (sideline occupation) with these fisherman engaged in other jobs. The total fishing capacity of these vessels is 1,949 GT and 9,434 KW engine power.

[23] http://www.parlevliet-vanderplas.nl/establishment.php

Table 2. Breakdown of Rügen's fleet by gear segment, 2009

Gear category	Length category	Number of vessels	tonnage	KW
Demersal trawlers and/or demersal seiners	10-12 m	4	76	552
	12-18 m	6	225	989
	18-24 m	2	239	442
	24+ m	4	520	809
Drift and/or fixed netters	12-18 m	2	54	275
Pelagic trawlers	24+ m	1	121	184
Vessels using pots and/or traps	12-18 m	1	24	220
Vessels using passive gears only	0-10 m	176	367	3,548
	10-12 m	16	176	1,520
others	0-10 m	93	104	671
	10-12 m	2	21	144
	12-18 m	1	22	80
Total		308	1,949	9,434

According to the data collection of "Bundesforschungsanstalt für Seefischerei" the small scale fleet of less than 12 m (using mainly passive gear) represents 94 % of the fleet in number (291 vessels), but comprises just 38 % (744 tons) of the fishing capacity and 68 % in KW. This means that over 60 % fishing capacity comes from 17 large-scale fishing vessels, which are based in Rügen's most important port in Sassnitz-Mukran.

The small scale fleet (less than 12 m) operates mostly in the inshore zone 3D24. Most of these vessels are crewed by 1-2 persons on average. The vessels of the large-scale fleet operate in the areas 3D25 and 3D25. The main targets of both fleet segments are herring, cod and flounder.

Rügen's fishery sector is organised in two producers' organizations: "Hochsee- und Kutterfischer GmbH" and "Rügenfang" e.G. In 2009 about 98 active fishermen were organised by the "Rügenfang" e.G. These fishers and their fleet of about 210 vessels (mainly with passive gears) belong to the following fishery cooperatives: "Hiddensee", "Mönchgut Gager", "Leuchtfeuer Thiessow", "Insel Vilm", "Seedorf" and "Sassnitz". The cooperative employs people in fish landing and processing, retailing, transport and administration. Of the vessels in the cooperative, there are 21 fishing cutters over 10 meters with the remaining of the fishing vessels are less than 8 meters in length. The most commonly used fishing methods are passive using gillnets, trammel nets, traps and long lines. A minority of fishing vessels use active fishing gear such as beam trawls. The total annual landings vary between 10,000 thousand tons and 11,500 tons (the trend clearly shows a decline). In comparison,

the entire landings in the coastal fishery sector in Mecklenburg-Western Pomerania totalled 21,886 tons in 2006.

The marketing is undertaken by the "Kutter- und Küstenfisch GmbH" and the fishing area exploited by this organisation can be viewed representative for the region's fleet.

Figure 6. Main fishing areas of the "Kutter und Küstenfisch GmbH"[24]

Trends in fleet segment numbers, segment power and segment tonnage show a pattern of decline among larger pelagic and whitefish vessels, and increases (small in absolute terms and in terms of the overall fleet, but significant in percentage terms changes within particular fleet segments) for smaller vessels. The pelagic sub-sector accounts for 92 % of vessel power (kW) and 94 % of vessel tonnage (GT).

The recent evolution of the Rügen fleet is shown in the graphs below.

In numbers, the fleet decreased constantly by about 20 % over the 2003-2009 period. This development particularly affected the small classes up to 10m, which were officially registered "inactive;" in this segment the decline was over 50 %. During the same time the fleet capacity decreased by about 19 % and the power of all segments together by about 15 %. In contrast the small-scale vessels up to 10m using only passive gears increased by about 15 %, although its fleet capacity in GT remained nearly constant in recent years.

[24] Kutter- und Küstenfisch Rügen GmbH, http://www.kutterfisch.de/sassnitz/seiten/fangflotte.html

Concerning the larger-scale vessels, there was a certain fluctuation in fleet numbers. Whereas the fleet capacity of demersal trawlers and demersal seiners approximately equals the figures of 2003 (after a strong decrease in 2006), the fleet of pelagic trawlers all-but-vanished.

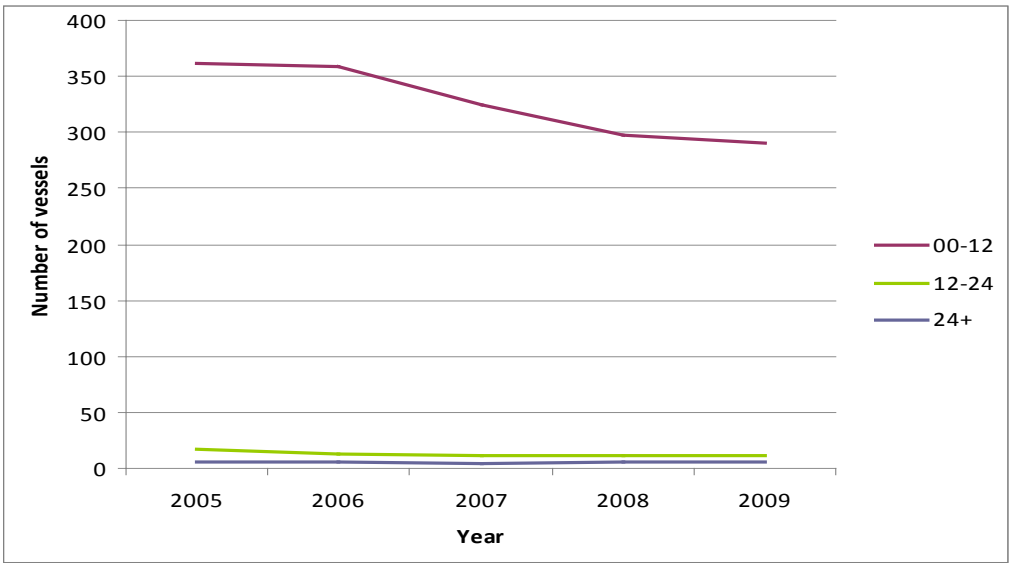


Figure 7. Trend in number of vessels, 2005 to 2009

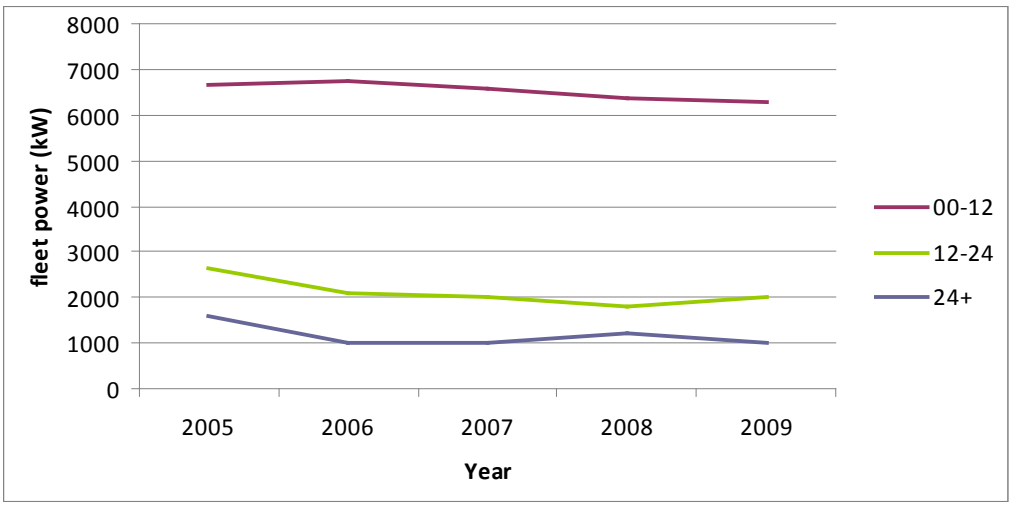


Figure 8. Trend in fleet power, 2005 to 2009

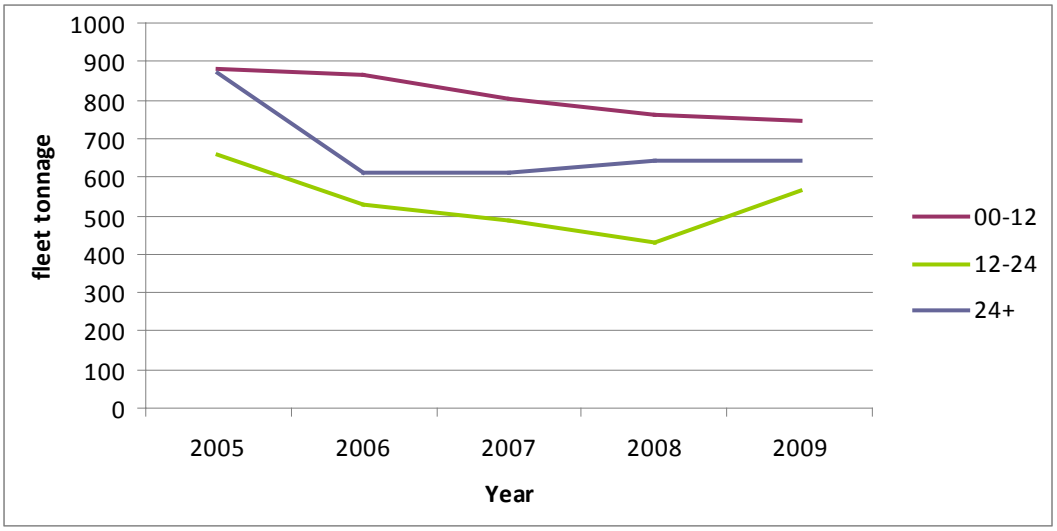


Figure 9. Trend in fleet tonnage, 2005 to 2009

The review[25] as well as insights from the focus groups give the following reasons for the steady decrease of the fleet:

- Falling profitability (less catches, higher costs of raw materials and supplies – especially for energy, volatile prices, higher office expenditures)
- Decreasing quota, especially for herring and codfish
- Retirement of older fishermen without replacements
- Fishers use the decommissioning opportunities / shutdown
- Uncertain future of the fishery sector don't attract young labour (they search for jobs outside of the fishery sector)

There are no detailed or official statistics available on the number of persons employed in the fishing industry (catching, aquaculture, processing, ancillary). Concerning the number of full-time employed fisherman the "Öffentlich private Partnerschaft Rügen" estimated their number in 2007 to be around 150. Around 120 of them were organised in cooperatives, the others are single enterprises.[26]

4.2 Fish stock status

The main stocks on which the local catching fleet depends are herring and cod. The catching volume of herring (about 10,000 tons in 2008) and a quota of 2,000 tons for cod (in comparison to the total landing volume of nearly 12,700 tons in 2008) imply their high economic value.

[25] Öffentlich-private Partnerschaft Rügen (2009): Lokale Entwicklungsstrategie zum Umsetzung der Prioritätsachse 4 des Europäischen Fischereifonds Fischwirtschaftsgebiet Rügen, p. 18

[26] Öffentlich-private Partnerschaft Rügen (2007): Endbericht GLES Insel Rügen, p. 18; Verband der Kutter- und Küstenfischerei (2007)

Other fished stocks like flounder or plaice do not play a significant role.

The sea around Rügen can be characterised as having a low-grade variety of commercial fish stocks. Furthermore one third of all fish species in the Baltic Sea are classified being at risk or potentially at risk. According to the "red list" many stocks are further decreasing.

The species herring and cod are both under EU management (since 2008) which includes all parts of the fishery fleet (large scale and small-scale vessels). The TAC (Total Allowable Catch) for herring in the western Baltic Sea (Div. IIIa and Subdivision 22-24) was reduced by 10 % for 2008 and further 39 % in 2009.[27]

According to recommendations of ICES' ACFM the TAC for cod in the western Baltic Sea (Subdivision 22-24) decreased from 26.7 thousand tons in 2007 to 19.2 thousand tons in 2008 and finally to 16.3 thousand tons in 2009. Since the actual catching volume for cod in some years went beyond scientific recommendation (but in accordance to the TAC), ICES reacted with a strong move reducing the TAC from 38.95 %[28] between 2007 and 2009. The management plan for cod aims to cut the fish mortality rate by 10 %, which would allow higher TACs in the future if the stocks recover on a sustainable level.

The forecast for herring is less optimistic. According to scientists, the stock population has not yet stabilised. Therefore ICES is considering further restrictions.[29] This stands in high contrast to the opinion of stakeholders in the fishery sector who are convinced of a higher stock status and perceive the ICES limitations as a threat to their profession and setting a dangerous precedent.

Small-scale fishers believe small boats with low capacity using passive gears should be treated differently from fishing vessels using active gears. Because they tend to have a lower impact on the ecosystem than larger vessels, passive fishing (the tradition in this particular region) should be given preference and benefits.

4.3 Fisheries infrastructure

This next section presents facts on Rügen Island's fisheries infrastructure.

Landing facilities: The Island has 53 ports of which 27 are home to fishing fleets of different size (main ports are shown in the table below). An additional 13 ports provide landing facilities and are used by vessels temporarily to park or to land fish.

[27] Fischerei in Deutschland, Portal des Bundes und der Länder, http://www.portal-fischerei.de/index.php?id=1302, http://www.portal-fischerei.de/fileadmin/redaktion/Bestandszustand/Datenblaetter/her3a22-24-09v1-all.pdf

[28] Fischerei in Deutschland, Portal des Bundes und der Länder, http://www.portal-fischerei.de/index.php?id=1300 , http://www.portal-fischerei.de/fileadmin/redaktion/Bestandszustand/Datenblaetter/cod22-24-09v1_all.pdf

[29] Fischerei in Deutschland, Portal des Bundes und der Länder, http://www.portal-fischerei.de/fileadmin/redaktion/Bestandszustand/Datenblaetter/her3a22-24-09v1-all.pdf

Table 3. Location of ports and registered fleet (tonnage, KW), 2010[30]

location of port	number of vessels	Tonnage	KW
Thiessow	43	156	1,203
Gager	40	102	708
Vitte	36	158	1,448
Saßnitz	35	1,093	3,072
Lauterbach	27	73	593
Ummanz	25	47	354
Breege	19	37	403
Lietzow	15	20	312
Zudar	6	6	29
Dranske/Rügen	5	15	165
Lobbe	5	5	31
Wiek/Rügen	5	14	88
Göhren	2	17	86
Binz	1	4	35
others	44	202	907
Total	**308**	**1,949**	**9,286**

Primary processing buildings: The Euro-Baltic fish processing plant, one of Europe's largest fish processing plants with a capacity to fillet 50,000 tons annually, is the largest processing plant in the area. This plant operates independently of the local catching sector.

There are numerous cold storage facilities available throughout the island. The largest facilities belong to the enterprises Euro Baltic (Parlevliet & Van der Plas), Rügen Fish AG and Kutter- und Küstenfisch Rügen GmbH.

Repair facilities are limited and most are located in the main port of Sassnitz-Mukran.

4.4 Details of the local catching sub-sector

Detailed statistics by the Johann Heinrich von Thünen Institut show the development of landing volume (in tons) in Rügen and its value (in million €) Figures 10 and 11.

[30] Bundesamt für Landwirtschaft und Ernährung

Figure 10. Total landing volume in Rügen's ports, 2005 to 2009

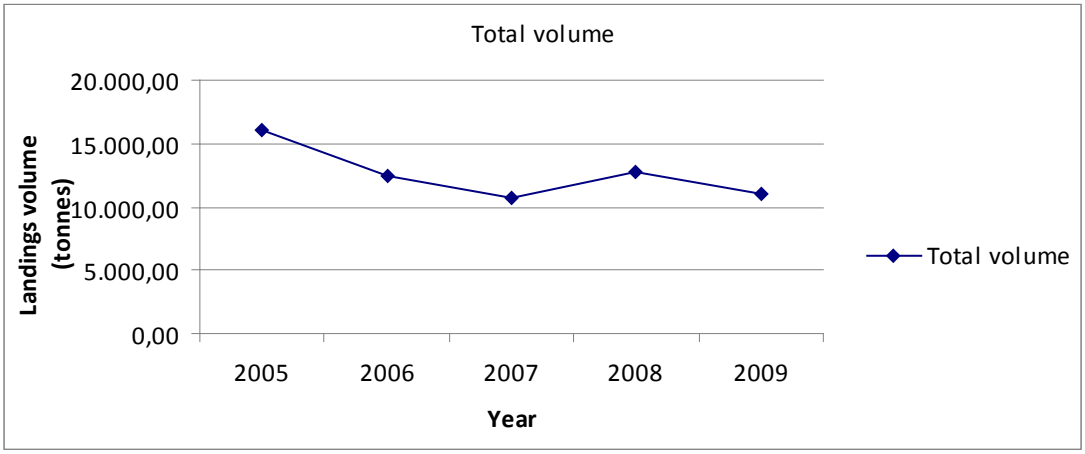
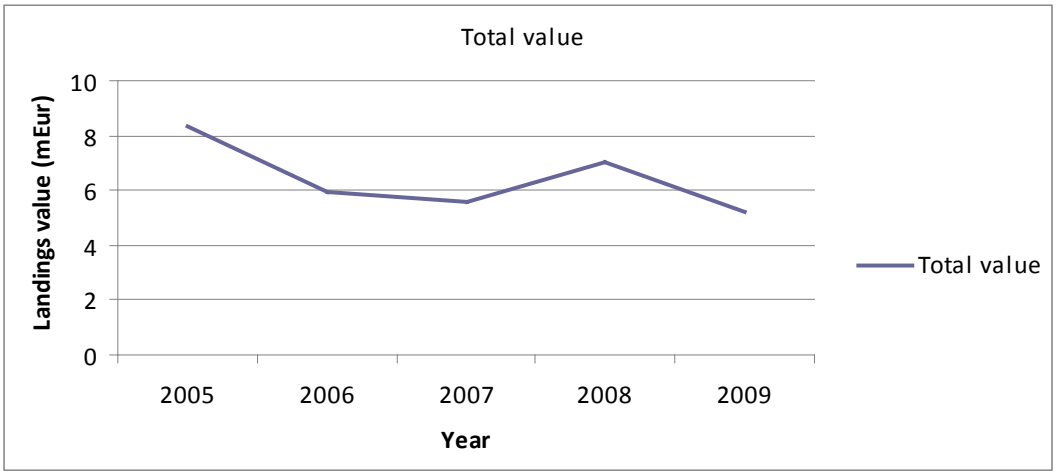


Figure 11. Total value of landings in Rügen's ports, 2005 to 2009[31]



The statistics show that landing volume is relatively volatile. The trend shows a significant decline in landing volume and value. Whereas landing volume and value amounted 16,095.35 tons and about 8.3 million € in 2005, just 10,950.04 tons and approximately 5.19 million€ were recorded in 2009. The gradual lowering of fishing quota is the reasons for this decline.

Data on profitability and costs are confidential and consequently not available.

The prices for the main fished species (Figure 12) indicate high fluctuations for some species. For herring, the most important species with the highest landing volume, the price has increased constantly.

[31] Johann Heinrich von Thünen-Institut, Bundesforschungsanstalt für Seefischerei

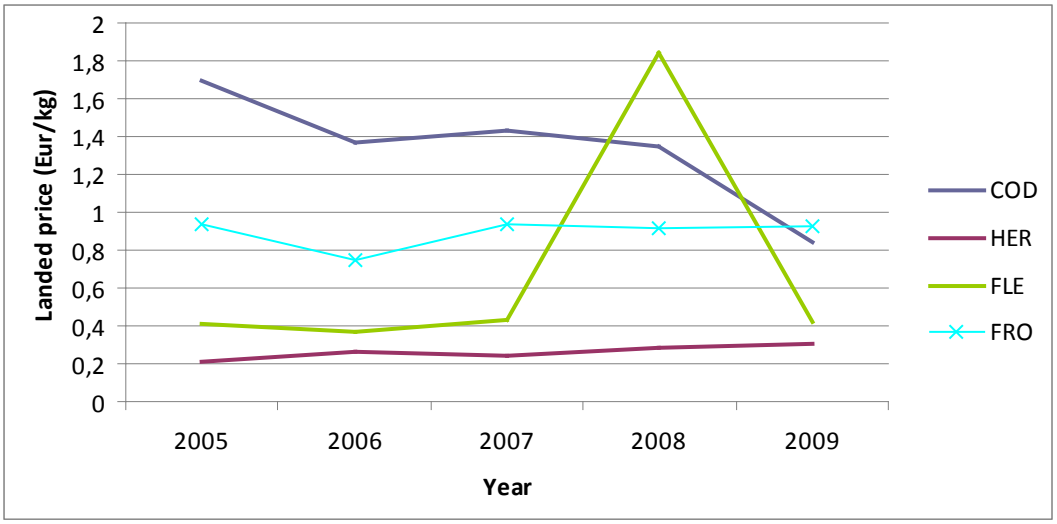


Figure 12. Prices of main fished species, 2005 to 2009

4.5 Details of the local processing sub-sector

Very little data are available on the processing sector. The three main processing enterprises are:

- Parlevliet & Van der Plas' Eurobaltic (http://www.parlevliet-vanderplas.nl/establishment.php)
- The Rügen Fish AG (http://www.ruegenfisch.de/)
- Kutter- and Küstenfisch Rügen GmbH (http://www.kutterfisch.de/sassnitz/index.html).

These three companies process nearly the entire processing volume in Rügen. Additionally, there are numerous small private companies who are highly specialised in processing like fish smoking or other services for local restaurants.

The statistical office does not provide any data on the processing sector but according to the Chamber of Industry and Commerce in Rostock about 13 companies are involved in the fish industry (that includes fishing as well as processing and trading). Three larger processing facilities include:

- One plant operated by the "Kutter- und Küstenfisch Rügen GmbH" is located at the port of Sassnitz and enables the direct processing of landed fish.
- In 2003 one of the largest fish processing centres in the European Union was constructed on Rügen Island. The "Euro-Baltic" plant is located in the port of Sassnitz-Mukran. It is the only processing plant in Germany which has the capacity to fillet herring. Now the entire traditional fishing industry as well as fishing vessel from Schleswig-Holstein and foreign vessels have the opportunity to land their catch in Mukran instead of sailing to Denmark or the Netherlands. The plant gives employment to approximately 100 full-time workers and to an unknown number of seasonal and subcontracted workers.

- The company “Rügenfisch” specialises in canned fish production and processes large varieties of fish (e.g. herring, cod, tuna, salmon, mackerel, shell fish, sardine and many other).

4.6 Details of the local aquaculture sub-sector

There is no aquaculture production on Rügen Island.

Though there is no aquaculture production, two fish processing and manufacturing companies import fish from foreign aquaculture production.

Local officials favour and try to secure traditional fishing and therefore reject any engagement in fish production from aquaculture. However, in June 2010, Dr. Till Backhaus (Minister of Agriculture, the Environment and Consumer Protection of Mecklenburg-Vorpommern) announced the construction of the first experimental plant for aquaculture in the federal state. This project is meant to adapt aquaculture technology to local conditions and to provide necessary practical information in order to develop this technology on a commercial scale in the region. According to Dr. Backhaus Mecklenburg-Vorpommern (and especially Rügen), with a total of 128,000 hectares of inland waters and its enclosure to the Baltic Sea, provides ideal conditions for innovative aquaculture production and could secure many jobs in the coastal fishery sector.[32]

4.7 Details of the local ancillary sub-sector

There is no information available about the ancillary sector. It is not possible to access the ancillary sector directly related to the fishing industry.

5. Governance

In Germany, the coastal fishery sector, particularly the fishery fishing with passive fishing gear has no lobby. Other fishery segments fishing with active fishing gear are better represented. In general, small-scale coastal fisheries are not valued as they should, relative to their employment effect in rural and disadvantaged areas, their better utilisation of natural resources and working capital.

Quota allocation

For historical reasons, the quota allocation varies between the two federal states that border the Baltic Sea. During the GDR, herring and flounder were the key target species of the fisheries, whereas cod played only a minor role. Following the 1989 reunification, many of the larger fishing vessels in the new federal state of Mecklenburg-Western Pomerania went out of business, leaving behind primarily small fishing vessels in the fishery. At that time quota was newly allocated between the “old” (Schleswig-Holstein) and “new” (Mecklenburg-Western Pomerania) federal states. The quota was distributed according to the circumstances of the current quota and the prevailing (at that time) fleet segments in the fishery sector. This meant that a larger portion of the herring quota was allocated to Mecklenburg-Western Pomerania while the share of the cod quota was much lower: the distribution of the cod quota was 30 % for Mecklenburg-Western Pomerania and 70 % for Schleswig-Holstein, though this was adjusted in subsequent years.

[32] Dr. Backhaus (Minister of Agriculture, Environment and Consumer Protection of the Federal State of Meckelnburg-Vorpommern), press release No. 152/10 – 07.06.2010, http://www.regierung-mv.de/cms2/Regierungsportal_prod/Regierungsportal/de/lm/_Service/Presse/Aktuelle_Pressemitteilungen/index.jsp?&pid=20012

In a second step, the allocated quota is distributed within the federal state and between the existing fisheries cooperatives in the federal state. Every year they meet and agree on the actual shares each cooperative will have and use.

As Delaney (2008[33]) found in similar Baltic study, fishermen operating smaller fishing vessels often complain about the quota allocation between small and big fishing boats. An often, unconsidered argument in this respect is that these larger fishing vessels are always called upon if quota entitlements have not been fished and are threatened to be lost. One fisheries cooperative confirmed that there is always the possibility that due to severe weather conditions in autumn the quota cannot be fished. However, if more than five percent of the quota is not fished it has to be handed back to the government authority responsible for the national quota allocation.

During the end of the year is the peak period of the fisheries cooperatives. By the 30th of October they must report to the BLE (Federal Centre for Agriculture and Food) how much of each quota has been fished for the year thus far. The aim is to prevent hoarding of quota. The job of the fisheries cooperatives now is to monitor fished and outstanding quota to trade and exchange quota within the cooperative respectively with other cooperatives. This goes to such lengths that overfished or outstanding quota is traded with other countries.

Enforcement

A qualitative survey conducted in the neighbouring community of Freest in 2008[34] revealed that the single most important issue for fishermen was the perceived strong surveillance through the marine border patrol, marine police and fisheries inspection. Yet, fishermen expressed exceptional confidence in these local government authorities and executive bodies concerning the effective enforcement of current fishery legislation. On the other hand respondents criticized widely the lax enforcement in nearby Poland encouraging illegal fishing and punishing those fishermen fishing in compliance with the law. In this context, fishermen highlighted the importance to strengthen the participation of fishermen in fisheries management to manage resources more effectively. This suggestion targeted their willingness to manage each other, since fishermen have a strong interest themselves to prevent IUU (illegal, unregulated and unreported) fishing. These fishermen questioned why fines in Poland and Germany varied substantially and demanded transparency in the current system and equal conditions for all countries fishing in the Baltic Sea.

The responsibilities of the government authorities in fisheries enforcement vary considerably between the two Baltic-facing federal states in Germany. In Mecklenburg-Western Pomerania the fisheries inspection carries the lead responsibility for fishery controls at sea. In Schleswig-Holstein the fisheries inspection only carries out controls on shore and the marine police is solely responsible for controls at sea.

5.1 Key local institutions

Key institutions of relevance to the fishing sector on Rügen Island include:

- The producer organisations “Hochsee- und Kutterfischer GmbH” and “Rügenfang” e.G.

[33] Delaney, A. “Profiling of small-scale fishing communities in the Baltic Sea: A Study requested by the European Commission. December 2008.

[34] Delaney, A. “Profiling of small-scale fishing communities in the Baltic Sea: A Study requested by the European Commission. December 2008.

- Fishery Cooperatives. In 2009 about 98 active fishermen were organised by the "Rügenfang" e.G. These fishers and their fleet of about 210 vessels (mainly with passive gears) belong to the following fishery cooperatives: "Hiddensee", "Mönchgut Gager", "Leuchtfeuer Thiessow", "Insel Vilm", "Seedorf" and "Sassnitz".

- The "Hochsee- und Kutterfisch GmbH" employs about 30 active fishermen (using a fleet of 8 vessels).

- EuroBaltic (Parlevliet van der Plas B.V.): largest fish processing plant in the region and owner of large-scale vessels

Kutter- und Küstenfisch Rügen GmbH.

Interviewed fishermen from different parts of Rügen have stated that it is hard for them to understand the gradual reduction in quota due to recommendation by the International Council for the Exploration of the Sea (ICES). They emphasised their long experience at sea and the lack of integration into the scientific research process which is the basis for European political decision-making. All interviewed fishers believe there is definitely a higher fish stock than mentioned in research results, and they demand a higher catching quota.

The attendees of the focus groups were aware of the economic importance and traditional value of the small-scale coastal fishery for Rügen. With the submission of a resolution (resolution: KT 081-03/09 -10.12.2009) lobbying to the European Commissioner for Maritime Affairs and Fisheries for the coastal fishermen interests is taking place. Whereas in the past the small-scale fishery had no lobby at all, the current situation means a significant improvement. This stakeholder undertaking the lobbying efforts spoke out in favour of a lifting of the last fishing quota cut for herring, a long-term abolition of quota restriction for the small-scale coastal fishery and the exoneration of administrative efforts for the fishers.

Nevertheless, regional interests must fit into the European management system.

The European Commission argues that it complies with the fishers request and did cut down the fishing quota for herring in the Baltic Sea for 2010 just by 16.5 % and not by 31 % as initially recommended by the ICES. It points out that the endangered stock of herring does not allow any lighting of restrictions but a long-term plan to secure a sustainable stock and the fishery economy related to it.

Additional points brought up by the stakeholders in focus groups:

- Angling activities on Rügen are booming. This is a blessing for the region because it attracts many hobby angling-tourists who spend their holidays on the island. But this development comes with a certain cost to the island's fishers who have to adjust to quota restrictions and closed fishing days while anglers don't need to. It is the combination of a rising angling sector (with modern vessels and fish locating technology) and the unsatisfactory conditions of professional fishers who demand restrictions on angling volume. The situation was exacerbated by some reports which demonstrated that the catching volume of hobby anglers is much higher than expected (estimates so far). Especially the increasing herring angling is in stark contrast to the tightening economic situation of the fishers and leads to serious concerns and protest in the fishery sector.

- Fixed closed day for fishing don't comply with bad weather and should be spread across the year for the small-scale fishery.

- Industrial trash fish fishery in the Baltic Sea should be restricted to certain areas since the by-catch of key species is high.

- Large vessels should bear the better part of quota cuts (as large vessels have the opportunity to fish for different species in different sea areas while small-scale vessels concentrate on a few species in a defined area); another argument for the unbalanced social impact on the high employment ratio in the small-scale sector.

- Employees of the fishery sector want to be integrated into the scientific evaluation process.

- Small-scale fishermen feel barriers in commercialising and selling their products to the local and regional tourism industry (restaurants and hotels – often belong to foreign owners who have their own suppliers).

- Fishermen believe that small-scale fishery should be favoured by the EU (selective fishing, little impact on ecosystems) and therefore the process of decentralisation – but the development at the moment is the opposite (more bureaucracy and more restrictions, a process of centralisation).

5.2 Public intervention

The total eligible public expenditure of the programme Priority Axis 4 (2007-2013) for the federal state of Mecklenburg-Western Pomerania amounts to about 7,2 million € with EU assistance through the European Fisheries Fund amounting 5,448 million € (75 % of the total sum).

The strategy addresses the fishery through unification with touristic objectives. These are in detail:

- Construction of a historic fishery cottage for fish salting and smoking and for exhibition purpose

- Construction of a shelter style museum to present the traditional inshore fishery in Neuendorf/Hiddensee

- Renewal of the museum of local history in Mönchgut and a concept for a steady exhibition, not just focusing on the fishery

- Construction of a farmer-fisher-house in the shape of the local design - it will be used as an exhibition building for the inshore fishery museum in Baabe

6. Stakeholder analysis

Some key contacts on Rügen Island community are provided in Table 4. These stakeholders took part in focus groups and qualitative interviews on the history and future outlook of the Island of Rügen.

Table 4. Stakeholder details and contacts

Name	Organisation	Contact details
Mr. Grothe	Kutter- und Küstenfisch Rügen GmbH	http://www.kutterfisch.de/sassnitz/index.html
Mr. Kahlfuss	Landesfischereiverband MV e.V.	http://www.lfvmv.de/kutter.html
Mr. Krieger	Fisher	038391-8350
Mr. Kühne	Fischereiverband e.G. Leuchtfeuer (Thiessow)	038308-30000
Mr. Ewert	Fischergenossenschaft Mönchgut (Gager)	038308-30101
Ms. Maroch	Fischereigenossenschaft e.V. (Vitte)	038300-3912
Mr. Dobelstein	Fisher (Thiessow)	038308-2359
Ms. Kerstin Kassner	Landrätin - Kreisverwaltung Rügen	www.Landkreis-Ruegen.de,
Ms. Dobelstein	LEADER Regionalmanagement Rügen	03838 813-297, E-Mail: stefanie.dobelstein@landkreis-ruegen.de, www.leader-ruegen.de
Mr. Holtz	Mayor Sassnitz	http://www.sassnitz.de/portal/stadtverwaltung.html
Mr. Jügen Köck	NABU Kreisverband Rügen e.V.	hansjuergenkoeck@t-online.de
Mr. Kliesow	Mayor of Middelhagen/Mönchgut	http://www.middelhagen.de/kontakt/

7. Qualitative interpretation and analysis

7.1 Key events and drivers of change

Demographic aspects

The declining population on Rügen Island has been driven by a number of factors including: emigration for higher education without return upon graduation and emigration for suitable employment and aging with lower replacement rates. The island has served as a tourist destination for decades and many locals work in the tourist industry during the tourist season, though this season is of an extremely limited duration. Also, helpful for fishers, the tourist season tends to coincide with the closed fishing season for cod.

Economic aspects (all sectors)

Economically-speaking, the largest challenge facing Rügen Island presently is its remoteness and lack of sufficient employment for many of its residents. As demonstrated earlier in this report, Rügen Island is no longer so highly dependent on the fishing industry in terms of direct employment. Nevertheless, most people, including those within the municipal and regional governments, appreciate the importance of fishing in terms of cultural heritage and its critical importance for drawing tourists.

Tourism and the service sector are vital to the Rügen economy where nearly 25 % of the workforce is directly employed and from which almost 84 % of gross value added comes. The last 15 years have seen a sharp decline in employment in the primary sector (which includes fisheries): in 1990, 23 % of the employed workforce was found in the primary

sector; today it is 4.4 % in 2007. Given the lack of a manufacturing sector and infrastructure, the area is classified as economically underdeveloped. Furthermore, the average value of disposable income in Rügen (14,152€) is a significantly lower average than the national average (18,135€) and is, in fact, the lowest average of all federal states of Germany.

The tourism sector has grown in recent years, but reliance on such a sector nevertheless remains risky: the economic downturn in 2009, for example, saw a drop of overnight stays by 7 %. Nevertheless, individuals in leadership positions feel the tourism (service) sector holds great potential and is expected to grow over the next years. Key to this, however, will be increasing accessibility to the island for enabling future development. Consequently, investment in regional infrastructure, e.g. train and flight connections is essential.

Fisheries and aquaculture aspects

Catching sub-sector

In Rügen, the fleet of small scale boats (<12 m, manned by one or two people, and primarily using passive gear) represents 94 % of the boats (291 vessels). These vessels are spread around the island, while the larger boats primarily operate out of Sassnitz-Mukran. Though both fleet segments target herring, cod and flounder, the small scale sector primarily operate out of 3D24 while the large-scale fleet operate in the area and 3D25.

The main stocks on which Rügen's local catching fleet depends are herring and cod, and as with many Baltic fleets, they are highly reliant on few stocks with little opportunity to switch to others. There are no significant catch rates, for example, of stocks such as flounder and plaice. The catching volume of herring (about 10,000 tons in 2008) and a quota of 2000 tons for cod (in comparison to the total landing volume of nearly 12,700 tons in 2008) imply their high economic value and critical importance to the fleets. Consequently, the fleet is at risk of quota cuts and competition from other fleets. Currently, the Baltic stocks are in trouble with one-third of all fish species in the Baltic Sea are classified being at risk or potentially at risk. According to the "red list," many stocks are continuing to decrease.

At the same time, the Rügen fleet is being threatened by a proposed windmill farm (which local politicians are against), the environmental assessment of which did not take into account the seasonal nature of their fishing (meaning surveys were done in the threated closed area when it was closed to fishing), as well as through foreign fleet operating near shore—particularly the Danish trash fish fleet which in theory catches non-quota species, yet also catches quota species, the catch of which goes unreported.

Consequently, Rügen fishers are also under threat from continued underreporting of catch and continuing decreasing quotas.

Ancillary sub-sector

There is little quantitative data available on the ancillary subsector in Rügen. Nevertheless, it can be surmised that the fortunes of the ancillary sub-sector are largely driven by, and follow, the fortunes of the catching sector. Thus as the catching subsector ages and numbers fall, support services and businesses may also fall. If this is the case, potentially the trend of services concentrating in the largest port may rather than spread out around the island may be seen. As it is already seen, to a certain extent.

Governance aspects

There are two producers' organisations which represent the fisheries stakeholders: "Hochsee- und Kutterfischer GmbH" and "Rügenfang" eG. Rügenfang" eG. Rügenfang has almost 100 members, representing over 200 boats in five different cooperatives, while Hochsee- und Kutterfischer GmbH" has 30 members. The local sector is also represented at the regional and national levels by the local development and municipal bodies who see the support of the sector of primary importance to the health of the greater community.

7.2 Adaptation

Demographic aspects

The adaptive response to the demographic trend of falling populace and brain-drain has been to emphasise the importance of better social care (schools, healthcare) and infrastructure (links to the mainland and elsewhere in Europe). As with many islands and remote communities, these are key issues to support locals in their ability and desire to remain and raise families. Support for entrepreneurs is also underway as obviously lack of employment opportunities is a problem. It is important to note, the fall in unemployment stems from the unemployed moving away from the area, not from employment being found.

Economic aspects (all sectors)

Considerable effort is being placed by the local and regional governments into promoting tourism. Axis 4 funds have been used to restore and build fishing related historical structures as destinations for tourists. There are plenty of beds and rentals available, so efforts are focussing on promotional activities to highlight the local natural environment and sights and activities in the area. There are a number of local information offices on the island with an established website (http://www.insel-ruegen.de;) which is there to serve visitors seeking accommodation as well as to provide information on local activities on the island. There is also a municipal website on activities in the area which also provides community, tourism, and political information in English, Swedish, and German (http://www.ruegen.de/).

A very significant improvement in access to the island (two bridges) addresses some of the previous deficiencies in infrastructure, though international airports remain very far away.

Fisheries and aquaculture aspects

Given the significant contraction of fishing sector activity in the Baltic Sea, with the reduction of TACs for important species, it is clear Rügen is not alone in the current difficulties. The small scale fleet is more numerous than the larger boat sub sector with an aging population. Yet stakeholders on all levels—fisher to local and regional government— feel the fisheries should be supported and maintained. And indeed, feel the loss of the small scale fleet will be a loss for the community.

Catching sub-sector

How then has the catching sub-sector responded to recent challenges of declining stocks and limited quotas and financial pressures? The primary way of adapting to these changes have been through a) early retirement, b) outmigration, and c) an increase in unemployment.

Unlike some other ports, in regards to rising operational costs, for example fuel, the small scale catching sub-sector has not been as affected by rising fuel prices.

Ancillary sub-sector

As noted above, the ancillary sub-sector is closely tied with that of the catching sector. There is no significant other sector (e.g. energy) which can use their skills and/or products.

Governance aspects

The adaptive response by the main community representatives has been to secure funding for fisheries related tourist structures as well as infrastructure. Traditionally, German POs representing the small scale sector have not been well organised for participation in relevant fisheries meetings and policy at the national and at EU/International level to ensure the industry is being heard.

7.3 The future

In the future, the community envisions maintaining environmentally friendly living and businesses. A large part of this includes sustaining the fishing sector and ensuring there is support and a fishery for their fleet; this also includes linking the sector with the community as the sector is important for the tourism sector, as well as with the community. It is hoped the adaptive measures of maintaining the population of those of working age and increasing the number of businesses located in Rügen.

Community discussions revealed a number of priority areas for the fisheries sector which need to be addressed, though the fact that these are not infrastructural issues makes it difficult to address. In order for the community to succeed in their vision of how a sustainable and viable community and sector can be met, a number of issues out of their control must be resolved. Delivering such will increase employment and support the community.

Infrastructural development

- Modernisation of the harbour facilities in Sassnitz (improvement of the train and car loading tracks)
- Marketing and extension of harbour facilities in Sassnitz-Mukran (recently new companies have settled in this area)
- The fishery harbour facilities in Sassnitz and many locations throughout the island are in good condition (no information on further developments). The large fish companies (Parlevliet & Van der Plas, Rügen Fisch AG, Kutter- und Küstenfisch Rügen GmbH) have their own landing facilities (for small vessels as well as large trawlers).

Entrepreneurship

As a part of regional and local development plans, support for new businesses and new training opportunities will continue to be emphasised in the future. This will need to be the case for community stability.

Prices

Sales prices for fish products are key to the profitability and viability of the industry in Rügen as they are everywhere that fishing vessels are operating in this Baltic Sea area.

Vessel viability

The small scale sector does not have particularly high costs, though the larger boats do, of course. Consequently high fuel costs are not a prohibitively high for this subsector, though costs impacts all boats. The lack of stable TAC levels for the fishers is of greater concern. Also there is great concern for boats from outside the German MS boundaries which are viewed as taking “their” local fish, both as reported and unreported catch. Certainly the state of the main Baltic stocks at the moment is a concern throughout the Baltic basin and this must be controlled if the stocks are to stabilise and grow.

Governance

Industry representation in Rügen, as with other small-scale ports in Germany, is rather weak, without a strong voice, their interests and needs will not being met. Also there is an issue of the political levels. The regional government is pushing for a windmill park to be located in traditional Rügen Island fishing areas, while the local municipal government is against it, on the grounds of the effect it will have on the fishing fleet. The lack of agreement by the various political governing institutions may also hinder development.

In terms of more direct fisheries governance, the fishing sector is in favour of regionalisation in the implementation of the Common Fisheries Policy. There is a desire by the local community for management measures taken at the regional level. Stakeholders also feel management measures should be based on regionally-specific, scientific research which can include all regional activities currently un/under-reported.

7.4 The role of public intervention in the past and in the future

There has been limited public intervention in the recent past on infrastructural projects. Those that have taken place have revolved around improving access with the mainland through bridge construction and improved roadways.

7.5 Conclusion

The Rügen community has historically been dependent on the fishing sector, and highly reliant on the tourist sector—which is closely linked to natural and heritage tourism. The fishing sector is made up primarily of an aging fleet of small-scale boats using passive gears (192) going after demersal stocks, but there is also a small subsector of trawlers (20), of which six are larger boats (18-24m+). There is only one pelagic boat and one vessel using pots/traps. The fishing sector itself has faced a number of significant threats in recent years, most importantly recently is the decline in cod quotas. There is one large processing firm located on the island, but this is nearly entirely dependent on imported fish (mainly herring) and has no reliance on locally caught fish.

Efforts are underway in the community and region to develop non-fishing sector activities and these should continue to be supported; the community, however, is likely to continue to need the fisheries for reasons of both cultural and economic importance. This mean continued improvement of management of the Baltic stocks, especially cod, is necessary for a sustainable fishery and community. Further efforts into alternative employment and value added activities should be encouraged, and this may require government and EU-support. Rügen is, after all, classified as an economically underdeveloped region with the highest unemployment in Germany, and thus an area with few other economic opportunities to the tourist-related sector, of which fisheries plays a role.