Aalborg University
2007

Tourism Sustainability in Relation to the Environment

A case study in Fanø Island

Urban Planning & Management

Group 07um1001

Aalborg University
The Faculty of Engineering and Science
Department of Development and Planning
Fibigerstræde 10 – 13
9220 Aalborg Ø
Denmark

Title:

Tourism Sustainability in Relation to the Environment (A case study in Fanø Island)

Project period: 7th February 2007 to 12th June 2007

Study: Master of Science programme in Urban Planning and Management 10th Semester

Project group: 07um1001

Group Members:

_____
Ibrahim Lubega

_____
Walid Darwish

Supervisor: Claus Lassen
Number printed: 4
Page numbers: 88
Appendix: 2

Preface

The topic of this report is, ***Tourism Sustainability in Relation to the Environment, a case study in Fanø Island*.** It was carried out by project group 07um1001 of the 10th semester of the Master of Science programme in Urban Planning and Management at Aalborg University between the periods of February 7th, 2007 to June 12th, 2007.

The choice of the topic for our project is owed to the belief that tourism is an interesting venture and that various parts or countries in the world are trying to invest heavily in this venture by for instance restructuring their infrastructures, conserving various aspects, etc. All of which, these changes in the urban landscapes have various diverse impacts to the environment of the areas in one way or another. Therefore, this project group is interested in exploring: how and what measures have been taken in various parts of the world to protect and conserve the environment while at the same time sustaining this venture. However, to comprehensive be able to undertake this exploration, a limitation of the scale of exploration has been made by selecting a specific case study area which is Fanø Island in the Wadden Sea Region. The reason for this particular area selection will be argued in the introduction chapter of this report.

The references in the report are done according to Harvard Referencing style, whereby a source is written in the text using the last name of the author, followed by the year of publication and page numbers and then a `full stop´ afterwards. For instance: (Urry: 1995: 173). Where the project group has used the same publications by the same author, we use (ibid) provided that the text by the same author follows each other. Where it doesn't, we write the whole reference.

The position of the reference determines what it is referring to. If the reference is placed before a full stop, the source is referring to the previous sentence. If the reference is placed after a full stop, the source is referring to the previous segment.

The chapters in the report are numbered consecutively. Figures and tables are numbered according to the chapter they are in and then by using consecutive numbers. At the end of the report, a list of references includes more information about the sources used.

The project group used different kind of computer programme (AutoCAD, Photoshop and Excel).

We would like to acknowledge that this report would not have been possible without the collaboration of several people who answered our interviews and helped us to look for information.

During the project work several persons were contacted whom the project group wishes to thank for their kindness, time and assistance in all forms.
These are Marco Brodde *an employment in Fiskeri og søfartmusset, Esbjerg and Tourist office in Fanø*. Dr. Folkert de Jong *Deputy Secretary from the Wadden Sea co- operation in Germany***,** and our supervisor Claus Lassen from Aalborg University for the various guidelines and remarks he gave us. Thanks you all.

Enjoy the Report.

Best regards

Group 07um1001

List of Contents

CHAPTER ONE

1. INTRODUCTION

1.1. Introduction

Tourism, in all respect is an inspiring and fascinating venture. It is an extremely sensitive and vulnerable Venture, subject to human motivation and behaviour which leads to various impacts. Yet as of today, most economies are investing a lot in this venture in terms of development of transport networks, service training, hotel developments, etc (Sheller and Urry: 2004). This venture is largely environmentally dependant. This means that without an attractive environment, little tourism would exist (Project Tourism: 1995).

This environment can be characterised of for instance: recreational and game parks, equisetic shopping centres, beaches and other facilities whole of which whose development affects the environment as well as other sectors such as transportation networks, housing, etc of an area. However, the success of tourism in an area greatly depends on the quality of its environment, and good quality tourism development requires the protection and improvement of the environment. The most important tourism resources are the natural beauty of the land, their distinctive or exotic character, their recreation possibilities, and the cultural of the people. Although, the hotels, resorts, transportation networks, recreation facilities and other tourism infrastructures can complement the venture, but they can never completely replace its dependence on natural environmental resources and as such they must be protected. (ibid)

And in an effort to protect and improve the environment of various areas in different parts of the world, government agencies have embraced and engaged themselves in sustainable tourism by engaging in concepts such as ecotourism, etc which is seen as a form of natural tourism which is expected to contribute to both conservation and development. The fundamental objectives in ecotourism are: the protection of natural areas, the provision of high quality tourism experiences and the stimulation of local economies. These objectives can be achieved through such means as the provision of resources for conservation, environmental education and local empowerment. (Stephen.F.11 et al: 2002)

According to Buhalis and Diamantis (2001), most decision makers concentrate on tourism development as a short term strategy with a tendency of neglecting the long term prosperity of an area or region. Most bodies involved in the tourism venture such as the hotel owners, government agencies, tour operators, etc often adopt a narrow view of sustainability for a destination without regard to tourism's interconnections with other sectors such as transportation, housing, employment

and the environment. Sustainability in terms of tourism can simply mean the development of the sector in a manner that ensures its long-term survival. In other words, while these groups may indicate support for sustainable strategies, they are in fact far more interested in maintaining the viability of the tourist sector (Butler: 1993)

And as such, as the tourism venture develops in a specific area, the area experiences various impacts in various sectors. However, since in this study we are interested in the relationship between tourism and the environment, we shall mainly focus on its impacts on the environment of the selected case area of this study, as it will be shown in the latter chapters.

However, it's imperative to note that tourism has both positive and negative impacts to the different parts of the environment, which are; the land, flora and fauna, air and water. These parts of the environment are affected in different ways by tourism, as it will be explained in detail in the literature review chapter.

However, though in terms of tourism development, priority should be to maximise the positive impacts and minimise the negative impacts by various stakeholders, at the same time, measures should be put in place for preserving the environment in which it operates which in turn will also contribute to its sustainability.

1.2 .The project objectives

The general objective of this study is to determine how tourism is sustained in relation to the environment of the selected area of this study. And in order to determine this, the project group aims:-

- To assess the tourism potentials and products in the area: (a) identification of natural and cultural tourism sites and locations, their specific products including types, numbers and spatial distribution of the products and other tourist facilities. (b) Description of current management regimes of the locations and the products (http://www.ramsar.org/about/about_sustainabletourism_lakenakuru.pdf. Date assessed 17/02/07).
- To assess problems to the environment of this area as a result of tourism and what measures have been undertaken to control or minimise them, how there are applied, how they can be improved, what more could be done and how. The reasons for these assessments will be explained in chapter five of this report.

1.3. Problem Formulation

In relation to the objective of this project study, the project group developed a Research Question to act as a steering in this research, and this is as follows:

1. ***How can the tourism environment be sustained in general as well as in the chosen case area of this study (Fanø)?***

And in order to answer this question, different terrains will be explored so as to determine the relationship of tourism sustainability to the environment in general in the first case. And these include:

- The exploration of the relationship between tourism sustainability and the environment from the general literature view point in urban planning while providing an overview on it impacts on other sectors. And then explain its(tourism's) conceptual relationship with the environment with specific focus on the case area of this study.
- The identification of its (Tourism's) impacts on the environment and what measures have been undertaken by different stakeholders in different areas to minimise the negative impacts as well as which measures have been put in place to preserve the environment in these areas.

These explorations will be based on various arguments from various schools of thoughts and also from references of various international cases where tourism has been invested in, all upon which, reflection and points of criticism will be based during the analysis of the findings in the chosen case area of this study. And in this study, the case area is Fanø Island, which is located in the Wadden Sea Region which is managed under a trilateral co-operation between Denmark, German and Netherlands. This area was selected because of various reasons and these are:

- First and foremost, Fanø Island lies in Denmark which makes it possible for the project group to physically go and carry out research in that exact location.
- Secondly, this Island is the only decreed protected area in Denmark which makes it a unique area to research about and explore how various activities are undertaken in this area. This area also mainly relies on tourism as the main economic activity, which tourism has various impacts among which are environmental impacts which are the objective focus of this research study. There have also been proposals from the central Danish Government to transform the Danish Wadden Sea area where Fanø Island also lies into a National Park. And unlike in the other Islands of the Danish Wadden Sea Area where individuals use car or

water transport, individuals to and from Fanø Island use only water transport by means of a ferry.

1.4. The Wadden Sea Region

Since Fanø Island is located in this region of which the Danish Wadden Sea area is part, we find it important to briefly first explore the geographic build-up of this region: how it came to be under a trilateral co-operation; how its various areas under this co-operation are built up in terms of tourism developments and environmental sustainability, etc.

The Wadden Sea is the name for a body of water and its associated coastal wetlands laying between a section of the coast of northwestern continental Europe and the North Sea. The Wadden Sea stretches from Den Helder in the Netherlands in the southwest, past the river estuaries of Germany to the northern boundary at Skallingen north of Esbjerg in Denmark along a total length of about 500 km and a total area of about 2.100 km².

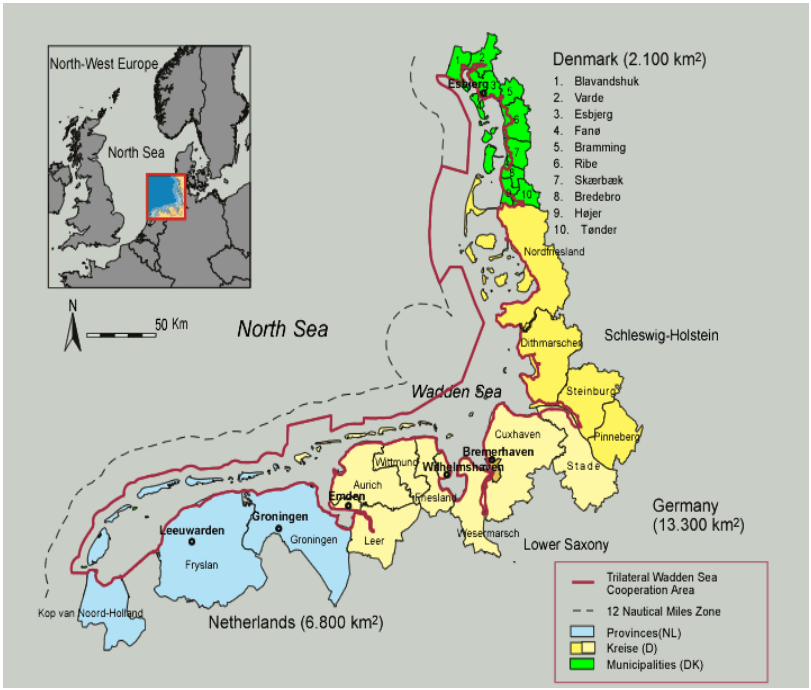


Figure 1.1.Show the Wadden Sea in Denmark, Germany and Netherlands.
Source:
http://www2.skovognatur.dk/Lindet/nationalpark/Om_pilotprojektet/omraadet.htm. Date assessed 14/02/07

The Wadden Sea is famous for the rich fauna, avifauna and flora. Today, a great part of the Wadden Sea is protected under a co-operation of three countries namely: Denmark, Germany and Netherlands. These three countries have been working together since 1978 on the protection and conservation of the Wadden Sea. The co-operation covers management, monitoring, research, as well as legal and political matters. Furthermore, in 1982, a Joint Declaration on the Protection of the Wadden Sea was agreed upon to co-ordinate activities and measures for the protection of the Wadden Sea. In 1997, a Trilateral Wadden Sea Plan was adopted. (http://en.wikipedia.org/wiki/Wadden_Sea Date accessed 14/02/07).

1.4.1. Danish Wadden Sea Islands

However, since Fanø is an Island which lies exactly in the Danish Wadden Sea side, we find it significant to explore and determine how it's built: what it comprises and where various areas are located especially Fanø Island. However, since the Danish Wadden Sea Area comprises of a lot of areas, we shall limit our exploration to areas with Island status just like Fanø so as to explore how similar or different are the activities carried out on these various Islands.

Figure 1.2.The Danish part in Wadden Sea. Source: http://www2.skovognatur.dk/Lindet/nationalpark/Om_pilotprojektet/omraadet.htm. Date assessed 14/02/07

Fanø Island: Fanø is located just opposite Esbjerg to which it is connected by a ferry. The main towns on Fanø Island are Nordby and Sønderho. Other towns include Fanø Vesterhavsbad and Rindby. The Island is 16 km long and 5 km wide, and has an area of 56 km². As of 2005, about 3,169 people lived there (http://en.wikipedia.org/wiki/Danish_Wadden_Sea_Islands, Date assessed 14/02/07).

A variety of developments and natural environment aspects are found in Fanø especially infrastructure developments among others as it will be shown explicitly in the latter chapters. The Island's whole western shore is made up of beaches, and the sea opposite the Island's northwest end is also home to the "Søren-Jessens-Sand", a vast sandbank. More of the literature and conceptual exploration of Fanø Island will be done in chapter 5 of this report.

Mandø Island: Mandø Island on the other hand is a smaller Island further south, a bit further from the mainland. It is Denmark's only Hallig, being much like the Islands which bear that description among the German Islands. A dike on Mandø keeps the sea at bay. Much of the Islanders' history involves efforts to reclaim parts of their Island from the sea (ibid).

Rømø Island: Rømø lies in the southernmost part of Denmark's Wadden Sea area. Rømø is linked to the Danish mainland by a road running across a causeway, and the Island also lies only about 3 km from its German neighbour Island Sylt, to which,it is connected by a ferry. Rømø is home to a

number of small communities such as Kongsmark, Østerby, Lakolk, and Sønderstrand. (http://en.wikipedia.org/wiki/Danish_Wadden_Sea_Islands, Date assessed 14/02/07).

1.5. Summary

Therefore, from the various brief explorations in the Wadden Sea Region, the project group intends to explore more and carry out an in-depth exploration of various areas which are relevant to this study in the Wadden Sea Region especially Fanø basing on various available literature and data from the conceptual research study of Fanø upon which: an analysis, recommendation, discussion and conclusion chapters will be based.

CHAPTER TWO

2. RESEARCH METHODOLOGY

In this chapter, we describe the method(s) which we have used to answer the research question: and also the sources of data collection and how the analysis of the study was to be carried out. This is to give the reader and insight into; how the research work was carried out, how data was collected, what theories of tourism sustainability in relation to the environmental where reviewed, etc.

2.1. Research Methodology

The purpose of this study is to discuss the current environmental challenges in relation to the tourism venture which are being faced in Fanø Island. In order to probe into the research question, the research methodology is designed to contain the data collection style and analytical approach, the research flow, as well as the collection of relevant materials and data.

2.2. Project design

The investigations in this report were conducted in form of a case study. This is because a case study oriented research is one which is well suited to investigate research questions of; "how" or "why" especially where the researcher has little control over the subject of study (Yin: 2003). Yin (1989: 22, 23) also argues that by using case studies as a research strategy; this illuminates a decision or set of decisions by addressing reasons: why they were taken, how they were implemented, and for what result(s). The illumination of the case offers an in depth understanding to an investigator to know how to report the results of the findings. And in this research study, the project group is going to follow this style of data collection as illustrated on figure 2.1 below. And the aims in each section are described in the various descriptive parts below.

Part 1 (Chapter 1 and 2)

This involves the general introduction of: Tourism of this report, the highlight of the background situation of the case study area of this research study and its various surrounding areas and the problem formulation of this study.

Part 2 (Chapter 3)

This part contains the definitions of various concepts of tourism. Theses theories will offer a point of reflection and analysis for the case study area about tourism sustainable in relation to the environment. In this quest, various concepts such as: ecotourism, tourism mobilities and carrying capacity will be reviewed.

Part 3 (Chapter 4 and part of chapter 5)

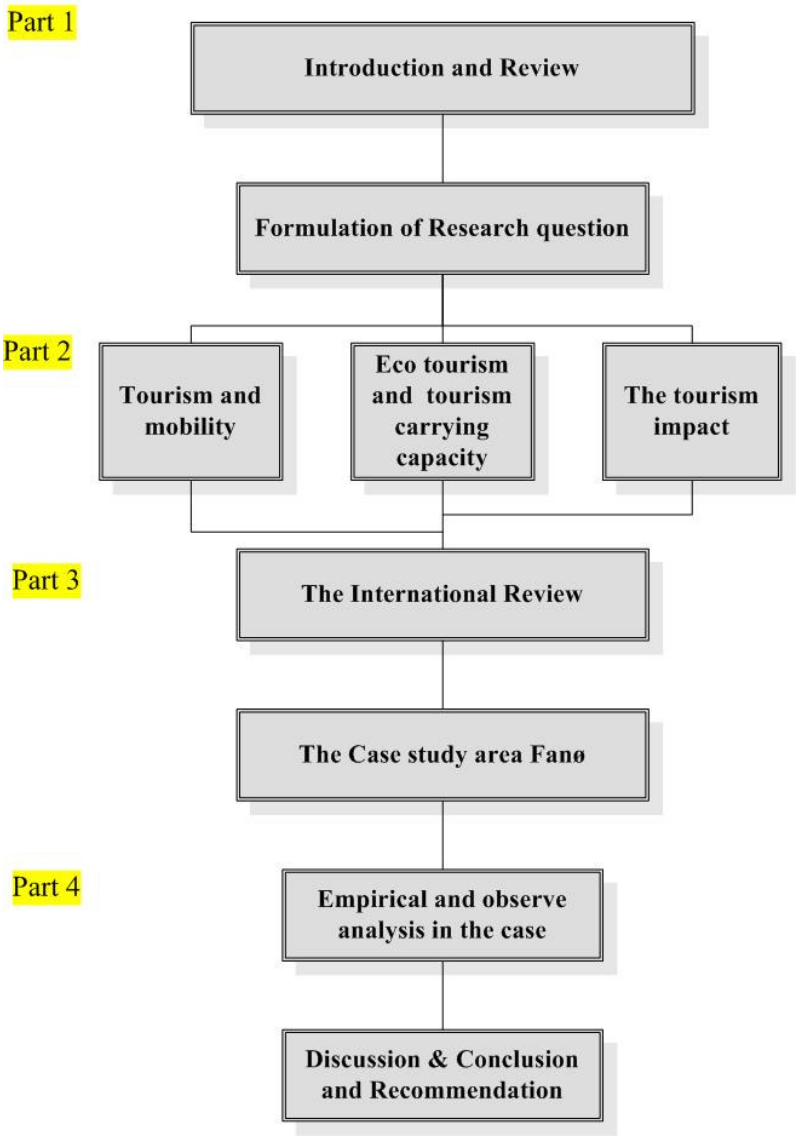


Figure 2.1.Overview of the structure of the report and each part.
Source: Group 07um1001

The project group divides the analysis into two parts. The first part is a review of various international cases about tourism sustainability in relation to environment and the second part is a situation analysis by constriction on environmental problems and carrying capacity in the case study area.

Part 4 (The rest of chapter 5, 6 and 7)

In this part, a conclusion is made about the study findings basing on the various theoretical as well as empirical findings, and there after, Recommendations will be made regarding the use, management and development in the protection areas.

2.2.1 Case study

In this research study, a case study was selected to enable a comprehensive exploration and analysis of the findings of objective of this study. This was done because a case study permits a researcher to work with many variables. This is appropriate especially when working with a research question or questions which set the stage for describing, understanding and explaining issues such as the intentions behind a decision-making process, how these decisions might be achieved and also how these intentions are and could be implemented in practice. In addition, case studies permit the capability to deal with and include much empirical evidence, such as documents, interviews, and observations (Yin: 1994). It becomes important in this context to discover the complex patterns of communications taking place between the actors and how they are able to reach a sound agreement for implementation. In view of this, apart from other documents used as data sources, interviews have been the main empirical evidence used in our case study for the purpose of obtaining different views about tourism sustainability in relation to the environment for analytical purposes. This has also enabled us to obtain deeper understanding of the case under investigation.

The strength of the case study is that, it shows details and interrelations in the processes studied, and therefore allows insights and raises discussions that are of general interest in decision-making in planning and management systems and the rational behind them.

2.2.2. Theoretical Source of Material

The act of making an effective analysis and processing of data at one's disposal and making sense of it remains one of the biggest challenges in case study research (Jorgensen:1989:107) as in Coetzee (2005). Nonetheless, in order for us to make a clear distinction between the theories and concepts used to support our study and they act as the basis of analysis, we conceptualised a theoretical and analytical framework. The theoretical approach to this study is central to: making sense of the various literature sources at our disposal; setting up meaningful models; and organising facts by explaining and interpreting them. Some theories obtained from our literature sources have been chosen after being found to be of useful measures to our inquiry. These theories have been outlined as bases for analysis in the study. They have been chosen from different theoretical positions in planning, namely the communicative action, participation in decision-making, etc in various tourist destinations.

The theory of participation in decision-making by for instance: the Municipality, the tourists' bureau, the private sector, etc in Fanø Island in planning has been adopted in the framework for

analysis in this study in the context of how it has been used in the case of the Fanø Island environmental sustainability project.

The literature for this project were obtained from both primary and secondary sources such as; interviews with different individuals and the project group, observations in various selected areas, textbooks, published articles from the library and from the internet.

2.3. Data collection and data analysis

The fulfilment of the data requirement has been achieved though a varied and critical collection of methods where both general sources and also subject-specific sources have been used. The project group has made use of written, verbal and visual data.

Both primary and secondary data have been used in this study. The primary data consist mainly of qualitative interviews with key informants. These interviews contributed to our understanding of the subject of investigation.

2.3.1. Written data

Written data is a type of data which is obtained from already written articles, publications, archives, journals, books, etc.

Written data was primarily collected from the library, the Internet and sources suggested by the project group's lecturers and supervisor. The basic knowledge of the Wadden Sea Region was obtained from respondents from: the Wadden Sea Co-operation Secretariat in Germany, the Danish ministry of Environment and the internet. This knowledge has been supplemented by the aforementioned methods. However, Data from the internet was used with conscious because most of it is argued to lack reliability.

2.3.2. Verbal data

Verbal data is a type of data which is obtained through: an on spot, face to face interview, telephone interviews, etc between the interviewer and the interviewee about a particular topic or subject.

Verbal data has constituted an integral part of the research methodology of this report due to the use of interviews as the primary sources of data. Interviews are a qualitative method of data collection which gives rise to qualitative data, quantitative data or both. The use of interviews for this research serves as a credible source to obtain information on the processes surrounding tourism sustainability in relation to the environment in Fanø Island. This method served as inspiration to us and was

applied in this study to obtain detailed information and the experiences, interpretations and opinions of all the subjects interviewed for our analysis.

The qualitative analysis and interview are scientific methods whose dialogue comprises of various instruments of data collection. Interviews are different from daily lives talk or professional talk; there have a structure and a purpose. Kvale (1996) described qualitative analysis and interviews as a particular fitness by talk, of which purposes is to catch up descriptions from the interview about real life aspects with a view of interpreting their meanings.[1]

The verbal data has been derived from interviews conducted with (key persons):

- Brodde, Marco, Fiskeri og søfartmusset, Esbjerg and toursit office in Fanø
- Jong, Folkert, Deputy Secretary from the Wadden Sea co- operation in German

Some of the interviews were face to face, and others by e-mail correspondence. The questions planned for the interviews were semi-structured, which means that during the actual interviews some answers to our questions needed clarifications, while others needed better insights into the issues being discussed.

2.3.4. Visual data

We made numerous field trips to Fanø Island so as to observe and explore the actual situation of this area in terms of: the existing tourist sites, tourist developments, environmental impacts, etc as a result of the tourist venture. Besides observing and exploring the actual situation of Fanø Island, the field trips where aimed at enabling us to also: carry out the interview with one of our key respondent in this report; to take pictures of various locations; to research and ascertain what activities are undertaken in various areas, what are the most attractive locations, what are the impacts of the activities undertaken there to the environment, which areas are restricted, what type of planning and management strategies are applied in these areas, what role are played by various stakeholders in the conservation and sustainability of the environment and how they are engaged in this planning and management among other aspects. All these were done with the view of engaging ourselves in the local environment and acquire data and also be able to develop new data basing on the findings in the case study area of this study.

[1] Translated from: Lassen, Claus ph.d (Det kvalitative interview som redskab til at afdække den potentielle mobilitet. Udgangspunktet for det kvalitative forskningsinterview som videnskabelig metode er, at samtalen udgør det grundlæggende redskab for dataindsamling. Et interview er i modsætning til dagliglivets samtale en professionel samtale, der har en struktur og et formål. Kvale (1996) beskriver det kvalitative forskningsinterview som en særlig form for samtale, hvis formål er 'at indhente beskrivelser af den interviewedes livsverden med henblik på fortolkninger af meninger med de beskrevne fænomener).

2.4. Source criticism

The reliability of the sources used will be analysed in the following.

The reporting of this report has been based on the four different sources, which can be seen in figure 2.2.

	Strengths	Weaknesses
Documentation	Stable – can be reviewed repeatedly Unobtrusive – not created as a result of the case study Exact – contains exact names, references, and details of an event Broad coverage – long span of time, many events, and many settings	Retrievability – can be low Biased selectivity, if collections is incomplete Reporting bias – reflects (unknown) bias of author Access – may be deliberately blocked
Archival records	Same as for documentation Precise and quantitative	Same as for documentation Accessibility due to private reasons
Direct observation	Reality – Covers event in real time Contextual – covers context of event	Time consuming Selectivity – unless broad coverage Reflexivity - event may proceed differently because it is being observed Cost – hours needed by human observers
Interviews	Targeted – focuses directly on case study topic Insightful – provides perceived causal effects	Bias due to poorly constructed questions Response bias Inaccuracies due to poor recall Reflexivity – The interviewed gives what interviewer wants to hear

Figure 2.2: Strengths and weaknesses of different data collection methods, based on (Yin: 2003: 86)

- The sources of documentation and archival records have been used throughout the whole report. Mainly in form of material from books, brochures, reports and homepages on the Internet.
- Direct observations took place during different hours of different days. In this way many of the aspects touched upon in this report, have been analysed both from a literature view and

from a participation view. To some degree it can therefore be argued that the investigation, where possible, has undertaken a form of phenomenological approach, by being able to participate in experiences of the local environment, interacting with different people in the case area of this study.

- The interviews, gave us a clear insight into the discourses of planning and management about environmental aspects in Fanø Island by different stakeholders.

2.5. Limitations of the report

The subject for this study is a Danish case as it was argued before. This led to some available data to be in Danish. However, due to the fact that we are an international group, it has not been possible for all group members to read every piece of data obtained since some was in Danish. This meant that, one member of the group had to spend some time translating data in Danish to English. This is time consuming and more importantly some of the meanings can get lost in translation.

CHAPTER THREE

3. LITERATURE REVIEW

In this Chapter, theory about tourism development and its environment impact in protected areas will be explored and reviewed.

The purpose of this is to gain knowledge about tourism development, its relations with other disciplines such as economics, sociology etc, its implications to environment as a result of the tourists themselves and the transport networks they use to get to the various tourist destinations, etc. This knowledge will be used to relate to the tourism venture and its implications on the Fanø Island, which is a part of the Wadden Sea. This review will be based on various literature which offer similar and holistic views on tourism and its environment implication and also our personal stands on the subject.

The main subjects to explore among others are as follows:

- Concepts of Tourism: What is tourism? What is its sociology of tourism? What discussions have been made about tourism by various scholars? Etc
- The theories of Ecotourism in Ecosystems and carrying capacity in tourism sustainability in various tourists' destinations.
- Tourism mobilities and the impacts of the Tourists and their means of Transport to a specific destination.

3.1. Tourism

According to the World Tourism Organisation, a tourist is a temporary visitor staying at least 24hours in any country that is not normally his/her place of residence (Whitelegg: 1997:77).

The World Tourism Organization also argues that tourists are people who "travel to and stay in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited (http://en.wikipedia.org/wiki/Tourism. Date accessed 28.02.07).

According to World tourism organization's definition, the important issues in tourism are links between people, places and cultures.

The concept of Tourism has been defined differently by various scholars as it has evolved over time. (Jafari: 2000: xvii) Whereas earlier meanings focused mostly on economics, today tourism as a multidisciplinary field covers a broader scope because it interlinks various fields such as sociology, economic development, etc.

Mathieson and Wall recognized the breadth of tourism, much beyond economics, and defined tourism as:

> *"The temporary movement of people to destinations outside their normal places of work and residences, including the activities undertaken during their stay in those destinations, and the facilities created to cater to their needs", (Mathieson and Wall: 1982: 1)*

Whereas according to Urry: "Tourism is a leisure activity which presupposes its opposite, namely regulated and organized work. He argues that it is one manifestation of how work and leisure are organized as separate and regulated spheres of social practice in modern societies and that acting as tourist, is one of the defining characteristics of being modern"(Urry:2002)

> *"According to us, tourism to a tourist is un economic movement of an individual or group of individuals to various destinations for either social, leisure or academic purposes where to other stakeholders such as the places in play, the tourist bureaus, hotels, government, etc, it's a concepts which involves: economic, political, social and environmental aspects". (07um1001)*

Tourism includes many geographic, economic, environmental, social and political dimensions. Global tourism results into wide range of employments and developments. Such employments and developments includes travel agencies; transportation; hospitality; bars; restaurants; cafes, internets, vacation cottages, etc (Sheller and Urry: 2004)

This multidiscipline has become a global financial power, achieving a planetary presence unequalled by many other economic sectors. And as it has grown, so have the criticisms of its environmental, economic, cultural and political consequences (Cater and Goodall: 1992: McLaren: 1997: Rothman: 1998: Honey: 1999)

In the twentieth century, the number of tourists has been growing consistently in various parts of the world as shown on figure 3.1.

Tourist travels have been made easier as a result of new developments in the transport systems such as: development of motor vehicles, aeroplanes, electric trains, etc all of which have democratised geographical movements and time travel to various destinations in just a few hours, unlike in the second half of the nineteenth century where mass travel movements were made by mostly coal trains (Stauth and Turner: 1988).

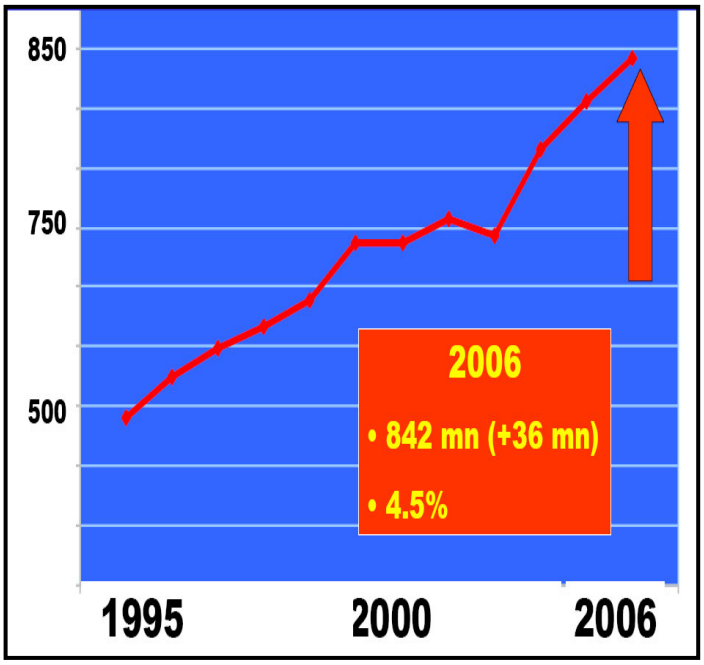


Figure 3.1.Showing the international Tourists in Millions between years 1995-2006.
Source:
http://www.unwto.org/facts/eng/pdf/barometer/barometer_february_07_e.pdf. Date assessed 22/03/07
(World Tourism Organisation)

Of those tourists between the periods of 1995 to 2006, the proportion of tourists visiting specific parts of the world is represented on figure 3.2.

These figures are forecasted to rise further by year 2020 as shown on figure 3.3 below because of the increasing desire of individuals to travel to: exotic or previously un-accessible areas and the availability of good means of transport to travel by.

Therefore, this means that more and more tourism activities will be undertaking in various parts of the world which will lead to different impacts, either positive or negative. And as such, its important to carryout more and more research and

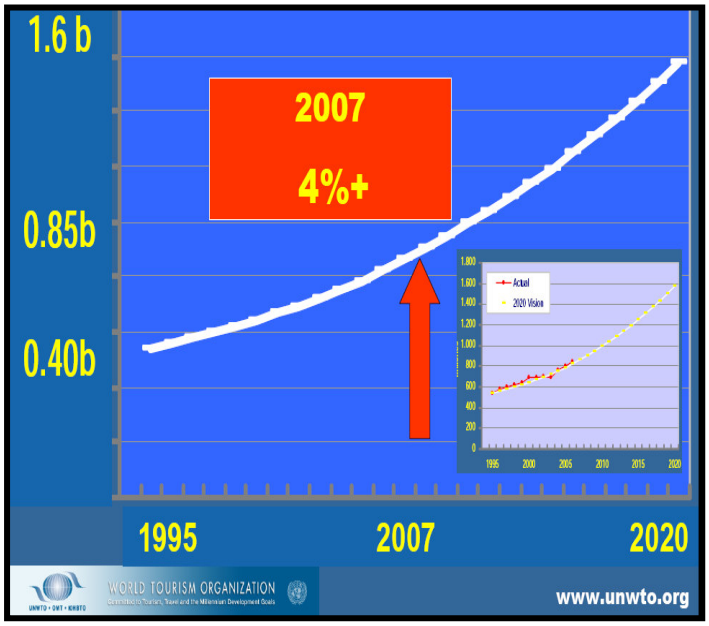


Figure3.2.Showing the international Tourists percentages between 1995-2006
Source:
http://www.unwto.org/facts/eng/pdf/barometer/barometer_february_07_e.pdf. Date assessed 22/03/07
(World Tourism Organisation)

engage in more discourses and collective action by all stakeholders of development planning in the tourism sectors as well as all the parties which are to be affected by tourism development in various parts of the world to come up with development strategies and plans which will result to benefits for their communities as well as protect the environment from tourism negative social and environmental effects as a result of its related-infrastructures development and users.(McCool and Moisey:2002:8). This is because such mobilities are highly significant to the global environment accounting for one-third of total CO2 emissions (Urry: 2003a), and contributing to the rising sea levels that are already threatening to submerge many current places to play.

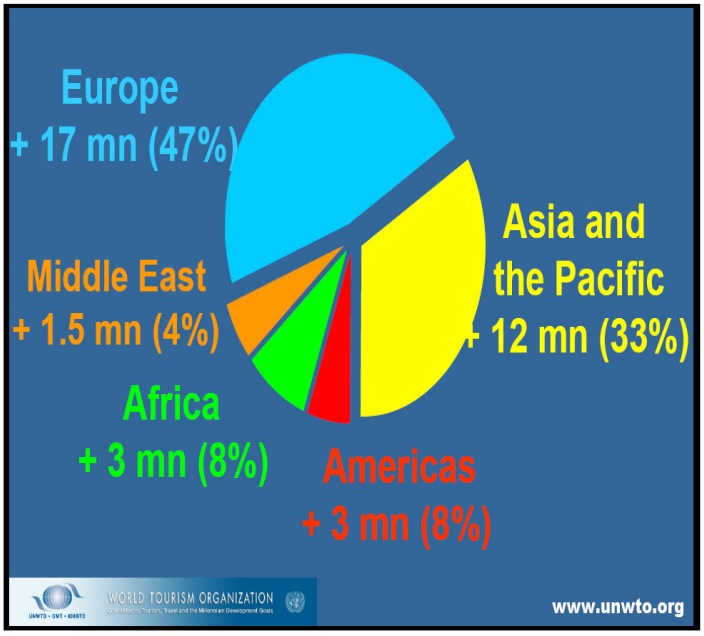


Figure3.3.Showing the international Tourists Vision from 1995-2020
Source:
http://www.unwto.org/facts/eng/pdf/barometer/barometer_february_07_e.pdf. Date assessed 22/03/07
(World Tourism Organisation)

In this terrain of strategic and participatory planning in the tourism sector so as to devise means of minimizing its negative effects while at the same time optimizing its economic benefits, its paramount to try and understand the sociology of this multidiscipline in the society where it is being undertaken among other issues if its objective of achieving a sustainable tourism which does not only focus on protecting the economic aspects, but also the negative impacts from its interrelated infrastructures and users which are detriment to the society where it exists is to be achieved.

Over the last two or three decades, the sociology of tourism emerged (Cohen 1972). And according to various scholars, there is no single sociology of tourism just as there is no single sociology of education or of a family. Instead, there have been various attempts to understand sociologically different aspects of tourism, departing from a number of perspectives such as cultural and leisure studies, industrial sociology, urban and regional sociology museum sociology, etc through numerous debates and deliberations. This has brought about a dramatic change in tourism since

more and more disciplines through or upon which it operates have been incorporated in it (Urry: 2002).

Some researchers argue that the sociology of tourism should be located within the parameters of "sociology migration" since "touring" essentially denotes movement to another place where others argue that the sociology of tourism should be contextualized within the "sociology of leisure". Which argument is found compatible and appealing with the definition of a tourist as a person at leisure that travels (Nash: 1981).

However, tourism as an experience, involves complex and often subtle interactions between the tourists, the site and the host community. It conceptualises a tourist as a pilgrim, wanderer, gazer or escaper. In understanding the sociology of tourism, it's necessary to also understand the role of a tourist in the tourist experience. Normally, the mass tourist travels in guided groups, cocooned within an environmental bubble. The tourists are said to derive pleasure from inauthentic, contrived attractions, etc which over time may appear as quaint to the local inhabitants as they do to the tourists themselves (Duncan: 1978:277).

The idea of tourists' experiences can be informed by a number of elements in respect to: the individual, the individual's social group, their travel experiences and the interrelating elements that sustain the experience; this enables the differentiation of tourism with its other related concepts such as ecotourism (Stephen and Moisey: 2002:235).

Cohen agues that there are a wide variety of types of tourists experience. He develops a typology based on parallels drawn from the sociology of religion, noting that experiential, experimental and existential tourists depend neither upon environmental bubbles nor wish to avoid entirely the strangeness of people and places being visited (Cohen: 1972: 1979:1988).

In tourism planning, it's argued that it's important to take into consideration, how the natural habitants and wild animals will be managed by determining the impacts of tourists on them. (P.F.J: Eagles and S.F.McCool: 2002). Also according to Agenda 21 for travel and tourism, a global effort devoted to conservation, protection and restoration of the Earth's ecosystem through the power of tourism is advocated for (WTTC et al: 1995).

From the above literature, we acquire knowledge that tourists engage in various behaviours such as travel together with baggage and imaginary maps among other things from one point to another for various reasons. However, in such of tourism experiences, the tourists together with their related aspects impact local communities but at the same time the local communities also impact the tourists by providing various attractions, whether natural or artificial attractions which are either

positively or negatively impacted, and to explore and verify these impacts, we need to study the environment of the local communities too such as its ecosystems and what measures have been undertaken to minimise or control them such as engaging in especially ecotourism activities, exercising carrying capacity strategy and exploring impacts of various tourists mobilities among others as explained below since these three relate especially to environmental sustainability in relation to tourism which is the main focus of this report.

3.2. Eco-Tourism in Ecosystems and Tourism sustainability

Eco-tourism, nature-based tourism, responsible tourism, green tourism, ecological tourism are all terms applied to what has been referred to as a gentle, more socially and environmentally sensitive type of tourism- one more in keeping with the contemporary shifting global focus from the mass consumption to one more aligned with our role within large ecosystems.

Ecotourism can be defined as that involving traveling to relatively undisturbed or uncontaminated natural areas with the specific objective of studying, admiring and enjoying the scenery and its wild plants and animals, as well as any existing cultural aspects (both past and the present) found in these areas (Boo: 1990: 10).

Eco-tourism is also referred to as responsible travel that conserves natural environments and sustains the well being of the local people (Ecotourism society: 1992:1).

On the other hand, according to Caneday and Duston, eco-tourism is a form of tourism that primarily involves observing and exploring the natural history of an area so as to experience, learn about and help conserve the cultural and natural history of a local ecosystem. And the key to the success of eco-tourism development in any destination is to base the development on well document ecotourism development plan on the issues and problems such as land use pressure related problems, environmental degradation, infrastructures, etc which beset the area. Some of these problems can be solved through: development of proper housing with proper water and sewage managed systems, development of observation view points, etc (Eco-tourism and Development Report: 2004).

All in all, tourism as well as ecotourism takes place in an ecosystem and as such, it's paramount to understand its components such as: its location, its type of recreational, birds nesting area, types of wild animals present, its operation seasons, its protected areas, etc all of which could enable assessment of implication of tourism and ecotourism in a specific destination (Caneday and Duston: 1992).

Ecosystems are the cities, towns and urban strips constructed by humans. Or they can be defined as a system formed by the interaction of a community of organisms with their physical environment. The growth in population by newcomers and development in terms of built infrastructures to provide services for them in an ecosystem leads to impacts on both the protected area environments and also on areas which surround it. These include environments that fringe cities as well as agricultural and natural landscapes. (http://en.wikipedia.org/wiki/Urban_ecosystem. Date accessed 28.02.07).

According to this definition, the ecosystem helps to understand how cities work as ecological systems in developing sustainable approaches to development of city fringe areas that reduce negative impact on surrounding environments. Developing approaches to urban design that provide for health and opportunity for citizens.

According to the World Commission on Environment and Development, (1987), the only effective method of protecting the environment, addressing economic progress, alleviating poverty and preserving human rights is through a development paradigm that provided for the needs of the present while ensuring that options for the future are preserved. This argument by the World commission on Environment gave way for various questions such as: How do you conserve the environment? Are there trade-offs? If so, what are they? How one does provides for the needs of the present while preserving options for the future generations? What is the role of different economic factors, government institutions, private businesses, etc? How does one develop and apply a science of sustainability while promoting more public participation by all stakeholders?

And in various discourses of tourism and its impacts, various development and management bodies of tourism destinations such as the central governments, municipalities, parks and others protected areas managers in various countries have embraced various means of protecting these ecosystems through for instance: the conservation of ecosystem structures; recognising the impacts of various activities on various sites and take action against them; decentralising management of various sites to the local regions; etc. All these contribute to tourism sustainability. However, the notion of sustainable tourism arises various questions such as; how to maintain the tourism venture for a long time? What should tourism sustain as a tool of development? (McCool and Moisey: 2002)

McCool and Moisey disagree with the notion that the primary goal in sustainable tourism is to build and manage a set of businesses that can maintain themselves over a long period of time as argued by some scholars. They argue that this view is narrow in the sense that it does not recognise tourism

as a tool to enhance economic opportunities, protecting the community's cultural and natural heritage, and maintaining a desired quality of life, its only objective of sustainable tourism is the tourism venture (McCool and Moisey: 2002).

That this view puts much emphasis on maintaining promotional programmes that ensure that the number of tourists visiting an area continue to rise while neglecting some issues such as its social and environmental consequences. However, they also argue that there is another view of sustainable tourism which recognises tourism as a tool of social and economic development, as a method to enhance economic opportunities, but can cause a lot of negative social and environmental impacts to an area if not managed and regulated well. And as such, tourists' bodies should practice sustainable tourism while coupled with ecotourism and community participation which can bring in elements such as appreciation, trust and a sense of ownership which will promote the protecting of the resources upon which the tourism venture is built while at the same time leading to benefits to local people and communities. And as such, processes such as determining the carrying capacity of a destination have been integrated in the tourism development planning strategies so as to contribute to sustainable tourism development (ibid).

3.3. Carrying Capacity

The process of defining TCC [2]is composed of two parts (it follows in principle the conceptual framework for TCC as described by Shelby and Heberlein (1986). These parts are described as follows below:

Descriptive part (A): Describes how the system (tourist destination) under study works, including physical, ecological, social, political and economic aspects of tourist development. Within this context of particular importance is the identification of:

Constraints: limiting factors that cannot be easily managed. They are not flexible, in the sense that the application of organisational, planning, and management approaches, or the development of appropriate infrastructure does not alter the thresholds associated with such constraints.

Bottlenecks: limiting factors of the system which managers can manipulate (number of visitors at a particular place).

Impacts: elements of the system affected by the intensity and type of use. The type of impact determines the type of capacity (ecological-physical, social, etc). Emphasis should be placed on significant impacts.

[2] TCC: Tourism Carrying Capacity

Evaluative part (B): Describes how an area should be managed and the level of acceptable impacts. This part of the process starts with the identification (if it does not exist already) of the desirable condition/preferable type of development. Within this context goals and management objectives need to be defined, alternative fields of actions evaluated and a strategy for tourist development formulated. On the basis of this, Tourism Carrying Capacity can be defined. Within this context of particular importance is the identification of:

Goals/ objectives: (i.e. define the type of experience or other outcomes that a recreation setting should provide)

Evaluative criteria: specify acceptable levels of change (impacts).

The tourism discipline especially in national parks and protected areas is subjected to the concept of carrying capacity so as to determine the number of tourist activities that they can entertain at specific time by the management of these areas in different places. Over the years, several arguments have been developed about the definition of carrying capacity by various scholars as follows. Middleton and Hawkins define carrying capacity as a measure of the tolerance a site or building can be open to tourist activities and the limit beyond which an area may suffer from the adverse impacts of tourism (Middleton & Hawkins: 1998). Chamberlain on other hand defines it as the level of human activity an area can accommodate without the area deteriorating, the resident community being adversely affected, or the quality of visitors experience declining (Chamberlain: 1997). Whereas Clark defines carrying capacity as certain threshold level of tourism activity beyond which there will cause damage to the environment, including natural habitants (Clark: 1997).

On the other hand the World Tourism Organisation argues that carrying capacity is the maximum number of people that may visit a tourist destination at the same time, without causing destruction of the physical, economic and socio-cultural environment and an unacceptable decrease in the quality of visitors' satisfaction

(http://ec.europa.eu/environment/iczm/pdf/tcca_material.pdf. Date assess 08/03/07).

In the publication, '*Agenda 21 for the Travel and Tourism Venture: towards environmentally sustainable development*', the Secretary-General of the World Tourism Organization, Antonio Enriquez Savignac, went further to stress the significance of carrying capacity by stating that:

> "*Tourism growth is one of the greatest success stories of our times but, in recent years, there have been increasing warning signs: the over-saturation and deterioration of some*

destinations, the overwhelming of some cultures, bottlenecks in transport facilities, and a growing resentment by residents in some destinations.

The Earth Summit forced us all to realize that we are depleting our resources much faster than they can recover. A good deal of our Travel and Tourism activity relies on these fragile natural or cultural resources, so it is in our interests to protect them for the future. We need to recognize that there are limits to the number of visitors in one place at one time, limits to the patience and welcome of our hosts, and limits to the numbers who can visit natural resources.

We can no longer assume that all demand can be met by unrestricted growth.

To preserve means to plan carefully and then to take the hard policy decisions to implement these plans. Travel & Tourism will inevitably continue to increase. Meeting this growth in a responsible, sustainable way, that preserves and enhances the beauty of the attraction, is the challenge we all face"

And as it has been witnessed in several tourists' destinations, in the realism of tourism development, any kind of development has always resulted in some change in the social and natural environment, thus necessitating tourism development to deal with trade-offs. And as such, some scholars such as Getz, (1982); Butler, (1996); Lindberg, et al., (1997) questioned the validity of carrying capacity in tourism and recreation literature. This has over the years led to planners to ask questions such as `how many is too many for a tourists destination`. And as such carrying capacity has come to be considered a process but not an end in minimising tourism development negative impacts in a planning system.

3.3.1. Carrying capacity as a part of planning system

The definitions of carrying capacity need to be considered as processes within a planning process for tourism development which involves:

- Setting capacity limits for sustaining tourism activities in an area. This involves a vision about local development & decisions about managing tourism.
- Overall measuring of tourism carrying capacity does not have to lead to a single number, like the number of visitors (http://ec.europa.eu/environment/iczm/pdf/tcca_material.pdf. Date assessed 08/03/07).
- In addition, Carrying capacity may contain various limits in respect to the three components (physical- ecological, social-demographic and political – economic). "Carrying capacity is not just a scientific concept or formula of obtaining a number beyond which development

should cease, but a process where the eventual limits must be considered as guidance. They should be carefully assessed and monitored, complemented with other standards, etc. Carrying capacity is not fixed. It develops with time and the growth of tourism and can be affected by management techniques and controls" (Saveriades: 2000).

The reason for considering carrying capacity as a process rather than a means to protection of various areas is because, though once a guiding concept in recreation and tourism management literature, due to: its conceptual elusiveness, lack of management utility and inconsistent effectiveness in minimising visitors impacts, carrying capacity has been largely re-conceptualized into management by objectives approaches namely; the limits of acceptable change(LAC) and the visitor experience and resource protection(VERP) as the two planning and management decision making processes based on the new understanding of carrying capacity (Lindberg and McCool: 1998) These two have been deemed more appropriate in the tourism planning processes of protected areas especially in the United states and have over the years been adapted and modified for use in sustainable tourism and ecotourism context (Wallace, 1993: McCool: 1994; Harroun and Boo: 1995).

3.3.2. Carrying capacity in protected areas:

Since the main case study area of this report is a protected area, we reckon it significant to highlight briefly about carrying capacity in these areas.

> Tourism in protected areas is associated with appreciating and observing nature, scientific endeavours and education. The World Conservation Union (IUCN) defines a '*protected area*' as: "*an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective measures* (http://ec.europa.eu/environment/iczm/pdf/tcca_material.pdf. http://ec.europa.eu/environment/iczm/pdf/tcca_material.pdf. Date assessed 08/03/07).

This type of tourism is associated with minimal development of infrastructures and small scale interventions in areas of normally strong control and restrictive management. Carrying capacity issues concern numbers of tourists, visitor flows and spatial patterns of concentration that these heritage and protected areas can accommodate vis-à-vis the protection of their nature and the functioning of the ecosystems (http://ec.europa.eu/environment/iczm/pdf/tcca_material.pdf. Date assessed 08/03/07).

3.3.4. Management tools for implementing Carrying capacity

Regulatory:

Zoning is rather a useful management tool. It is applied mainly in protected areas since their special status allows the definition and delimitation of zones where protection, conservation and limitations in the various areas are imposed. A typical division in zones is as following:

Zone A – Most valuable and vulnerable zones. Entry here is only authorised to scientific teams.

Zone B – Highly sensitive zones. Escorted visits in small groups are allowed here.

Zone C – Considerable natural interest zone. Some traditional and tourism activities are undertaking here with limited car access.

Zone D – Mild development and buffer: Tourism and visitor facilities, car access and parking, compatible activities (Defining, measuring and evaluating carrying capacity in European tourism destinations: 2000).

3.4 .Tourism mobilities

As of 2002, travel and tourism was argued to be the largest Venture in the world, accounting for 11.7 % of the world GDP, 8% of world export earnings, and 8% of employment (WTO: 2002). Global mobilities always take place through located practices and material cultures, including those in the peripheral places.

The discipline of tourism involves various players among which are the tourists themselves. However, the discipline of tourism to be complete, there has to be a notion of movement by the tourist from one point to another. This movement is determine by the location of the destinations where an individual or groups of individuals intend to go and the means of transport they would prefer and can afford to go by to these destinations. Individuals use various means of transport to get to various destinations and these include: commuting, by car, train, aeroplane, ship, bus, bicycles, etc. These tourism mobilities involve complex combinations of movements and stillness, realities and fantasies, play and work. These mobilities involve people and objects, aeroplanes and suitcases, etc and they tend to shape places where tourism is performed and contribute in the making and unmaking of tourists destinations such as development or renovation of road networks, development of tourists cottages, etc (Sheller and Urry: 2004) And as such, tourism mobilities can not be theorised in isolation of other diverse mobilities because the very places in which tourism comes to be performed are also places constituted by many other kinds of mobilizations and demobilisations.

Therefore, in order to understand the tourism mobilities through which a specific destination is constituted as a place to play, we must first understand how the area is demobilized and remobilized, how it is put into play. The places of tourism are formed and transformed by changing infrastructures of physical and informational mobility, by culture practices of travel and migration, and by the ever shifting mobilities of people, markets, disease, etc (Sheller and Urry: 2004).

In the culture practices of travel and migration, the car and aeroplane have played a key role. As it was previously argued, the car and the aeroplane have democratised geographical movements and time travel which has led to the ability and flexibility of various individuals to visit various destinations (Stauth and Turner: 1988). However, epidemiologically, besides their effectiveness as means of travel, these means of transport are also effective means of transport for increased number of exotic germs, air pollution among other negative effects due to their speed and diversity as modern means of transport (Homsy: 1999: p.v). On the other hand, when individuals travel, they carry with them markers of gender, norms, race, nationality, knowledge, baggage, imaginative maps, etc. These may in one way or another impact on the local members of the community or on the other hand avail special status to the tourist because of where he or she comes from (Sheller and Urry: 2004). All this is possible since mobility is always located and materialised where by places to travel places of inhabitation are also. However, these travels and inhabitations have various impacts on the places in play as follows below.

3.5. The impacts of the tourists and their means of transport to a specific destination

According to Machlis and Field (2000), a visit to a park involves more than a visit to the park. They argue that the visit entails travelling to and from the park as well as visits and stays at communities and villages along travel routes, perhaps at the communities adjacent to or within the park. Such travels may lead to a number of impacts, which are either positive or negative to the area being visited depending on who is impacted, how and what standards those affected use to evaluate the impacts. Thus, a local tourism business owner may view visits positively in the sense that the higher the number of visitors, the more revenue generated by his business. On the other hard, a local resident may view tourism-related traffic as contributing to congested roads and a lot of air and noise pollution, and thus may view tourist activities negatively. In this section we provide an over view of the general likely types of positive and negative impacts of tourists activities to tourists destinations. However, it's important to note that not all tourists destinations suffer the same

impacts, this is so because the nature of the tourist destination (such as its location, its tourists gazing location, sensitivity of its creatures such as birds, wild animals, etc) itself may determine what is likely to be impacted by the tourists visits.

3.5.1. Economic effects

As the tourism Venture of a certain area develops, this tends to exert pressure on the natural and economic resources of the area and the country as a whole depending on how development planning is carried out in that country. This is because the influx of tourists in an area can stimulate the development of secondary resources such as accommodations, transport facilities and service infrastructures. These pressures to modernise an often closely knit society, where culture and tradition have historically dictated the pace of life, have a profound effect on the development of these societies. Not only does tourism alter radically the local built environment through erection of guest houses, hotels, roads, etc, which are frequently unsympathetic to local building practices and materials, but it also puts increased stress on the often inadequate or non-existent systems of waste disposal causing problems of pollute water courses and diseases. (Whitelegg: 1997:80)

3.5.2. Social and Cultural Effects

Various individuals engage in travelling to various tourists destinations because of various reasons such as leisure, learn about other cultures norms, gazing at various views, poaching especially for wild animals for leisure or economic benefits such as poaching for ivory which is common in game parks in especially low developing countries (McCool and Moisey: 2002)

According to P.F.J. Eagles and S.F.McCool (2002), the primary positive social impacts of tourism deal with the ability to enhance a community to take care of its youngsters to seek productive employment, to increase the educational levels of its citizens and to provide affordable access to housing and health care. In the sense, these effects increase the community's capacity to adapt to the changes imposed on it. They also argue that tourism increases pride in local customs, traditions and rituals and that the probability for these to be preserved may increase as community members see increased interest in them from non resident visitors.

However, tourism may lead to negative effects such as when fundamental normative beliefs are not only challenged by the presence of tourists, but are changed, as when the dress and appearance of tourists are adopted by the residents. These types of impacts are particularly dramatic in the developing world. Social impacts also occur when tourists and tourism development lead to increases in crime rate, prostitution, illicit drug use, etc. For instance before the 1980s, Boracay, a

tiny Island in the Philippines dealt mainly in farming and fishing, however, after it was opened to the global tourist, a lot of pressure was exerted on its economy resulting into development of; electricity network, better water supply, hotels, etc all of whom in one way or another benefited the Island's economy with new job opportunities, more revenue, etc. However, with these benefits came other negative effects such as prostitution which subjects a lot of people to various diseases such as Aids, narcotics, together with the near idolisation of Westerners and their values by the young, which has led to a rejection of tradition Island life (Whitelegg: 1997:80). However, he also argues that though tourists in the industrialised world are not necessarily the root cause of these negative effects, but they provide the means which induces them, that's money such as in Thailand.

3.5.3. Environmental effects

Air travel as a form of consumption of space and time in the tourism Venture in this twenty-first century has had great impacts on the atmosphere, cultural and social damage on the tourists' destinations and health damage from air and noise pollution for example at Heathrow, Frankfurt and other airports.

One of the most important areas in which global air travels has affected massive social and economic change has been that of increasing the accessibility to remote and fragile areas to the global tourist For instance, the number of tourists to the Mediterranean which was predicted to rise from 100 millions in 1985 to 760 million in 2025 will cause to obvious environmental effects namely increase in use of fossil fuels to fly people there and intense shortages of clean water especially as a result of climatic changes in the region (Urry :1996: 174). This increase in accessibility coupled with high levels of disposable income, more leisure time and better education have promoted the demand for foreign holidays; furthermore, this increase in demand has enabled tour operators to keep prices low, thereby satisfying this demand with offers of relatively cheap package tours and charter flights to more remote and exotic locations (Whitelegg: 1997:77).

Negative impacts from tourism occur when the level of visitor use is greater than the environment's ability to cope with this use within the acceptable limits of change.

Uncontrolled conventional tourism poses potential threats to many natural areas around the world. It can put enormous pressure on an area and lead to impacts such as: land degradation due to soil erosion as a result of for instance overuse of land during specific periods of time such as during increased construction of tourism facilities, increased pollution, discharges into the sea, natural habitat loss, increased pressure on endangered species and heightened vulnerability to forest fires.

Tourism often puts a strain on water resources and sewage systems, and it can force local populations to compete for the use of critical resources. This is so because, generally the tourism Venture generally overuses water resources for hotels, swimming pools, golf courses and personal use of water by tourists. Sewage runoff can cause serious damage to coral reefs because it stimulates the growth of algae, which cover the filter-feeding corals, hindering their ability to survive. It can also damage the flora and fauna as well as the health of human beings and animals.

Tourism development can also put pressure on natural resources when it increases consumption in areas where resources are already scarce. Basing on all these likely negative impacts of tourism, planning authorities should take all the necessary initiatives to minimize these impacts because the reality in tourism development just like in any other disciplines of development like transportation development, agriculture development, etc, negative impacts are always bound to occur.

3.6. Conclusion

From these literature discussions, it's clear that:

Tourism planning has over the years undergone various discourses about its definitions, the tourist experiences, its sociology in society, etc. Its also evident that tourism is desired since its demand and consumption keeps rising as shown on figure 3.1 because of especially its likely economic benefits to the side of the providers such as employment, introduction of new technologies in protected areas, development of infrastructures such as hotels, road, more revenues collections, etc it can lead to in an area and the satisfaction its consumers can derive from it. It can also lead to adoption of new cultures and fashions by both the consumers (tourists) and the suppliers (local inhabitants). And basing on the forecasted figures as shown on figure 3.3 above, investment in it will continue to rise in the future.

Tourism is a multidiscipline which does not operate on its own but operates in linkage with or on other disciplines in an ecosystem(s) such as ecology, community development such as infrastructures development like water supply and sewage systems, hotels, roads, airports, local habitants, etc. Besides the economic benefits, its can result to negative impacts on the environment as a result of its developments and that sometimes trade-offs have to be made for it to progress since its impossible to prevent all its likely negative impacts. And as such measures such as practicing ecotourism, participatory planning by involving all stakeholders, determining carrying capacities of an areas, declaring some areas protected areas, etc among others have been undertaken to minimize these impacts.

Debates and discussions are still undergoing in various parts of the world of how to minimize environmental impacts especially from air pollution by motor vehicles, aeroplanes, fuel boats, infrastructure constructions, etc. Since though their impacts may take a long period of time to be visible, they affect the whole atmosphere resulting into health problems, global warming, among others impacts which can lead to catastrophic weather changes in various parts of the world. And as such besides other negative impacts as a result of tourism development, environmental impacts from tourism and any other kind of development call for constant attention in terms of discussions, research, planning strategies, etc which can minimize or control these impacts in these constantly changing development environments and human desires in different parts of the world for the contemporary generation and the future generations because though in the short run they may affect mostly the area where the developments are being undertaken, but in the long run, they will affects other parts of the world.

And since the objective of this report is to determine how tourism sustainability in relation to the environment can be achieved, it is paramount to first review various tourism development theories and their likely impacts to the environment, most of which have been reviewed in this chapter, so as to be able to come up with feasible solutions to the negative impacts. These theories will be used to contextualise whether they can be generalised in various aspects of the case area of this study basing on the conceptual research findings. In other words, this literature will be used to: analyse whether these impacts of tourism have been experienced;, whether the concepts of eco-tourism, carrying capacity and tourist mobilities have been applied, monitored, evaluated, etc and how, in the case area study area

CHAPTER FOUR

4. INTERNATIONAL REVIEW

This chapter is concerned with the implications of tourism development especially to the environment of various areas and what measures have been undertaken to redress them. It will be shown that the environment of various areas has had striking changes due to how they are exploited and developed so as to satisfy the demands of tourism market. This exploration will focus mainly on: what discussions have been carried out about the concepts of: ecotourism, carrying capacity and tourists' mobilites implications because these will be the main concepts which will be researched about in the case area of this study? Exploration will also be done on how these concepts have been embraced in conserving the environment of specific areas? Etc. These findings will be used as the points of reflection, criticism and analysis for the case study area findings of this research report.

And in this effort, we shall select certain destinations as the example cases. However, since our main case(Fanø) of this report is characterised of both natural and cultural aspects as it will be shown later in chapter 5, the example cases must emulate the same aspects so as to enable a clear basis of analysis of the main area of this study.

Therefore, the example cases to be explored among others are:

Destinations namely: The Belize in Central American, Lower Saxony German Wadden Sea, Sanibel Island in the west of Florida coast and the Wadden Sea Region in general. These areas are selected because of specific reasons.

- Lower Saxony German Wadden Sea area was chosen because first and foremost it is: a protected area like Fanø Island; a national part and part of the Wadden Sea Region with available data in English. And because it shall be used to differentiate between a national park and a protected area, which the case study area of this study is (Fanø Island), as it will be shown in the latter chapters. This will help us to determine the benefits and costs of a national park to those of a heritage protected area (Fanø Island) so as to determine whether it would be better for Fanø to remain as a protected area or it would serve it better if it is transformed into a national park has had been proposed by the Danish government.
- The Belize City in Central America has been engaging in a lot of ecotourism and mobility aspects as regards to its environmental protection. This will also be used as a comparison

and a reflection to Fanø so to review how various environmental aspects and how they have been dealt with in relation to those in Fanø Island

- On the other hand, Sanibel Island, an Island just like Fanø has been selected because of the structural changes it undergone from a protected area to a national park, which structural changes have been proposed and are still being tabled by the central government of Denmark and various stakeholders to transform Fanø into a national park

- Since the case study area of this study lies in the Wadden Sea Region, it is significant that we review the various activities in its various areas, and review how they: differ in for instance management; influence or affect activities in Fanø Island.

Urry argues that much of the environmental consequences stem from first, the fact that very much tourism is concerned within a sense visually consuming that very environment; secondly, from the enormous flow of people carried on many different form of transport which enable tourist to gaze upon often geographical distant environments; and third, from the widespread construction of tourist attractions and from the incredible concentrations of people into particular places And due to the new technologies of transportation such as air transport, this has made tourist travel both in terms of time and flexibility easy, thus resulting into a great number of people travelling to various places. Because of this enormous scale of tourism, the carrying capacity of the earth and its relatively finite resources is substantially reduced below what it would have been with out tourism (Urry: 1995: 173).

While national parks and other recreational areas are established to protect: the environment, its heritage values and on the other hand for recreational purposes, the problem for planning for them is always depicted in a tourism context, as how many visitors it can accommodate? What kind of developments a feasible in these areas? Etc. These questions call for a need to establish visitor carrying capacity for these areas.

In the early stages of carrying capacity research, many proponents dreamed of finding a single number which could be considered the limit of use beyond which there would be no damage.

However, the notion of a single carrying capacity was reject by several scholars by acknowledging that any recreational use produces some impacts; therefore, it is necessary to identify to what extent changes are appropriate and acceptable (Stankey et al: 1985).

It was soon realised that this was a simplistic notion for changes in the environment that occur with the first visitors, if not before. In most management structures and philosophy of the park organisation for instance throughout eastern and southern Africa where the park funding is mostly earned from the park entrance fees, special charges on accommodation, fees for specialised programmes, donations, etc with less funding from national governments, its argued that it is significant to understand visitor use levels for the fiscal health of the park and for the management of its resources (Eagles and McCool: 2002).

More perspectives emerged such as that of Lindberg, McCool and Stankey (1997) who defined carrying capacity as the maximum use of any site without causing negative effects on the resources, reducing visitor satisfaction or exerting adverse impacts upon the society, economy and culture of the area(Mclntyre: 1993).

Although the concept of carrying capacity has been modified over the years and some times rejected, it in fact underpins many subsequent ideas in the management of environment impacts in tourism and recreation (Asia Pacific Journal of tourism research, Vol. 12, No. 1, March: 2007).

The concept of carrying capacity has been applied in several areas, for instance in the famous Yihe garden in Beijing where Bao (1986, 1987) suggested a capacity of 42,087 person/day, based on which he suggested a variety of management strategies such as constant monitoring of the area so as to ascertain, what activities they can accommodation without detoriating. It was found that as much as the number of users is important in efficient environmental management system, it's equally or more significant to take into consideration and also evaluate the types of activities and their spatial and temporal distributions. And thus, scholars

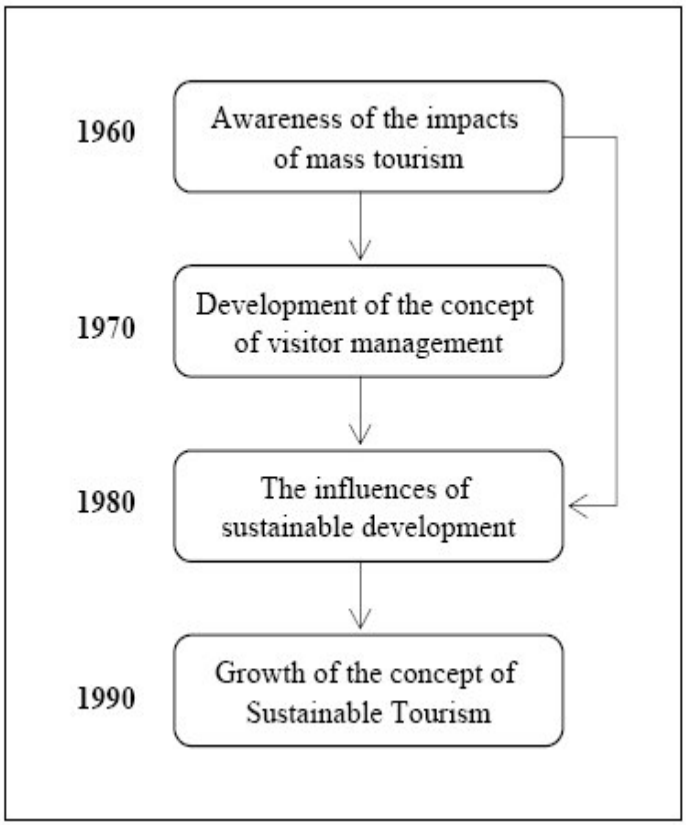


Figure 4.1.Showing the chronological development of sustainable.
Source: Tourism (Swarbrooke J: 1999: 8)

like Cui (1995) suggested that in addition to carrying capacity, it's important to undertake periodic surveys of user satisfactions in the environmental management system. And because of different studies and discussions about sustainable tourism by different scholars and stakeholders of different areas in play from as far the 1960s as shown on figure 4.1, various arguments and recommendations have been put into considerations and applied in order to promote sustainable tourism which benefits the stake holders as well as promote environmental conservation in several areas.
For instance, after the awareness of Scottish tourism opportunities and environmental needs in 2000, this development was followed by a tourism and environmental forum operational plan 2000 to 2003. And among its main aims were:

1. To ensure the Venture adopts good environment practices and capitalizes on the advantages they bring. And the priority objectives of this were to:

- Increase environmental elements to tourism training. This should be based around managing and improving the appeal of the environment and heritage as part of the tourism project.
- To enhance the quality of the environmental information provided by the tourism Venture for their visitors.

2. To ensure a national and local integrated approach to tourism and environment opportunities through:

- Encouraging a tourism Venture contribution to framing relevant policies.
- Provide direction on more effective integration of the environment and heritage.

Another awareness of environmental impact of tourism is the policy of the Scottish Tourist Board (STD) regarding capacities (Dear 2001). The STD and other local tourist boards are recommending geographical and seasonal dispersal of travel markets as a first step to limiting impacts. In its awareness of the environmental management, STD further established a scheme in 1998 for rewarding tourist businesses for their environmental accomplishments through a scheme referred to as the "Green Tourism Business Scheme" (GTBS) (Green Tourism 2001). And the elements of the inspection criteria include: waste, energy, water, etc. By 2000, hundreds of tourist service businesses had received awards based on their environmental accomplishments. Among the results have been reductions of energy costs, improved waste management, increased recycling, and

cleaner, safer, and improved landscape. For example: in Ashdene House; a small hotel on the outskirts of Edinburgh.

Urry further argues that development of environmental consequences is still expected in various areas such as in the Mediterranean because of the numerous Islands there such as Malta, Crete, Rhodes, etc which have become popular tourist destinations for Europeans. These areas have become highly dependant on tourism due to low developments in other sectors.

As of 1995, the Mediterranean was argued to be the most successful destination region, and it was predicted that the number of visitors to this region will rise from 100millions in 1985 t0 760 millions in 2025. And as regards to this, two obvious environmental effects will be the increased use of fossil fuels to fly people there, as long-haul holidays become widespread, and intense shortages of clean water especially with the probable climatic changes in this region (Urry: 1995: 173).

4.2. Different case studies for protected and National parks

In order to be able to evaluate, review and analyse tourism sustainability in relation to the environment in Fanø Island, we reckon that its paramount to review some international cases were this kind of sustainability has been experienced, which review findings will be used as: point of reflections; comparisons; criticism and recommendation developments for tourism sustainability in relation to the environmental impacts in Fanø. And various case areas where selected because of various reasons which were argued in the beginning of this chapter. And these are as follows:

4.2.1. The Belize (British Honduras) in Central American

Through global travel, and the extension of ecotourism destinations in the global periphery are being transformed into global places to play (Urry and Sheller: 2004:32).

Eco-tourism is one example of a new networked pattern of social life indicative of increasing global mobilites. Belize City has marketed itself as an ecotourists destination, with

Figure 4.2 showing the Belize City.
Source: Google earth

its main attraction centred on terrestrial environment such as rainforests and beaches. The Belize Municipality focuses on ecotourism visiting the Island off the mainland coast of Belize and transformations they produces in that city. Since ecotourists are defined as being those especially interested in visiting rare natural environments, yet reducing the impact of their holiday marking, landscapes and wildlife would constitute a major motivation draw.

Engagement with travellers and their tales in Belize City indicate that there were a number of common and recurring themes. One was their motivation to travel to Belize City, which ranged from a wish to experience a new culture to wanting a challenging and unusual holiday (ibid). Ecotourists had been attracted to Belize City through friends or relative who already had experience of the place. The most ecotourists stated that it was important for individuals to behave in an environmentally conscious in Belize. This idea of self limiting consumption appeared to be popular with ecotourists, yet despite this it was also argued that individuals efforts, while necessary for marine conservation, were not sufficient on their own, so government and private sector regulation were also necessary (Sheller and Urry: 2004:37).

4.2.2. Lower Saxony National park in German Wadden Sea

In a National Park, the main aim is to leave nature to itself to the greatest possible extent and be preferably unaffected by humans. The Wadden Sea National Park was founded in 1986 and is protected by law.

The Wadden Sea habitat, on the German North Sea coast, is unmatched anywhere else in the world. The following factors combine here to form a unique and very special place.

- The Sea bed slopes gradually and is only up to 10 metres deep.
- Sediments are carried here from rivers which flow into the Wadden Sea and form deposits in quiet waters.
- At a tidal range beyond 1.7 metres, the tidal current is strong enough to deposit material from the sea.
- The dunes and sandbanks which were formed from deposited sand act as natural breakwaters.

The protected zones of the National Park

The National Park of Lower Saxony is divided in three zones. These zones are:

Restricted zone: The restricted zone covers the most sensitive areas of the National Park. The strictest rules on conservation apply here in this zone. In the restricted zone, visitors are cautioned to keep to the marked routes for hiking, biking, riding etc from where they will be able to enjoy nature without disturbing it. Take note of the separate local arrangements indicated (http://www.nationalpark-wattenmeer.niedersachsen.de/master/C23766749_N23767434_L20_D0_I5912119.html. Date assessed 22/05/07).

Intermediate zone: Basically, this has the same rules on conservation as in the restricted zone, but walkers may use marked paths. There may be exceptions to the restrictions, however, because of the lower sensitivity of the countryside and recreation zone, to protect the environment, the use of the restricted zone and the intermediate zone is restricted not only for recreation but also for agriculture, fishing, hunting, boats etc .In the intermediate zone individuals can leave the marked paths for walking. The salt marshes are an exception. During the birds' breeding and rearing season - the period from April 1st to July 31st - they may only be entered by the marked paths. Please keep in mind that you may only use marked paths for walking, cycling and riding. Fishing is allowed everywhere in the intermediate zone. For certain parts of the intermediate zone separate arrangements apply which are indicated by signs (e.g. no access to dunes because of coast protection) (ibid).

The recreation zone: This zone is available for leisure and health purposes. In this area of the National Park, all activities are allowed which are essential for a holiday on the North Sea coast – swimming, resting, relaxing in beach chairs, riding, fishing, collecting shells and playing Camping, caravans, etc. Noisy events and off-road vehicles are not allowed. All of these discourses in one way or another promotes eco-tourism. The management of this national park and other areas in the Wadden Sea Region will be explained under subsection 4.3.2 of this report (ibid).

4.2.3. Sanibel Island in the west of Florida coast

Islands of the world are among the top tourists destinations and yet day are the most vulnerable to overdevelopment. Sanibel Island is about 12 miles long with a coastline of approximately 31 miles as shown on figure 4.2 below of this coast, over 14 miles are beautiful sandy beaches. The natural and culture resources are it is very important (Gunn and Clare: 2002: 278).

Figure 4.3.Showing the Sanibel Island. Source:http://www.covesidebandb.com/sanibel/location/images/island_map.jpg. Date assessed 27/03/07

In 1963, there was increased development of homes and tourism began as a result of the construction of a causeway to the mainland. Due to the uncontrolled developments, this caused environmental devastation which caused many protests against further developments on this Island. However, regardless of the many protests, more proposals for expansion of resorts, motels, etc kept coming (ibid).

The only egress from the Island is over two lane highway and causeway to the main land. For aesthetic reasons, local policy prevents road widening, limiting the capacity of off -Island flow.

And in 1974, through a referendum, a vote was passed to incorporate Sanibel Island into a city so as to be enable the promotion of further developments as well as environmental control so as to retain the local quality of life, visitor appeal, and as well as to protect the environment.

4.3. The Wadden Sea Region

The Wadden Sea is a shallow sea extending along the North Sea coasts of the Netherlands, Germany and Denmark as shown in figure 4.4 below. It is a highly dynamic ecosystem with tidal channels, sands, mud flats, salt marshes, beaches, dunes, river mouths and a transition zone to the North Sea.

Since 1978, the responsible ministries of the Netherlands, Denmark and Germany have been working together on the protection and conservation of the Wadden Sea covering issues of: management, monitoring and research, as well as political matters).

The importance of the Wadden Sea as habitat for birds, seals, shellfish and fish species stems from the high growth rate of algae, the so-called primary production. Two factors are essential for the high primary production. Because the water is shallow, there is sufficient light for algae to grow (http://www.waddensea-secretariat.org/trilat/brochure/brochure.html. Date assessed 27/03/07. Secondly the water of the Wadden Sea contains many nutrients which are also essential for algal growth. The Wadden Sea ecosystem is very dynamic with regular and unexpected changes from one extreme situation to another. Factors such as temperature with the possibility of ice, salinity, storms, waves and currents vary greatly. Only species, which have adapted to these extreme conditions, can exist here. That is why the Wadden Sea species, and consequently the ecosystem itself, have a large potential for survival. (http://www.waddensea-secretariat.org/trilat/brochure/1waddensea.html. Date assessed 29/03/07).

Figure 4.4.Showing the Wadden Sea Region locations. Source: http://www.waddensea-secretariat.org/news/documents/WSP-Maps/MAP-CWSS.jpg. Date assessed 27/03/07

4.3.1. Protection of the Wadden Sea:

Since we are at a task to review how tourism sustainability in relation to the environment in the various example cases areas has been achieved, then the Wadden Sea Region must be subjected to the same review, to determine briefly how planning and implementation of different strategies by the member countries of the Wadden Sea Region Co-operation is undertaken. This is because; some of these strategies have the potential to affect the environment of Fanø Island besides others areas in the region.

Already in the beginning of the 1970s, environmental scientists had stated that the ecosystem of the Wadden Sea Region cannot be divided according to national borders. The Wadden Sea is, from an ecological point of view, one system. The three countries made a trilateral cooperation called the Wadden Sea Cooperation under which this region is managed through different deliberations and consensus building.

The first trilateral governmental conference on the protection of the Wadden Sea was held in 1978 in The Hague, in the Netherlands. The second Wadden Sea Conference took place two years later in Bonn, Germany. And in 1982, at the third Conference was held in Copenhagen, Denmark.

According to the Wadden Sea Cooperation, individual countries declare proposals which they would like to implement after every four years. The proposals are discussed, and a consensus is arrived at by the different stakeholders about which proposals to implement. Other convention include: the Ramsar Convention and the EC Bird Directive, for a comprehensive protection of the Wadden Sea region as a whole, including its flora and fauna.

Since 1982, four more Governmental Wadden Sea Conferences were held and the trilateral cooperation strengthened and intensified. Other important trilateral events are the International Scientific Wadden Sea Symposia which are held every after three years. At the Symposia, scientists from the three Wadden Sea countries exchange relevant research findings and formulate recommendations to the politicians. During the Symposia, also management issues are discussed. (http://www.waddensea-secretariat.org/trilat/brochure/4trilateral.html. Date assessed on the 24/03/07).

4.3.2. The protection area in the Wadden Sea

In this terrain of reviewing protection areas in the Wadden Sea Region, we deem it right to highlight how different areas of the Wadden Sea Region in different member countries are managed and protected. This will avail us with a precise picture of how planning and management is carried out in individual countries although at a certain level these countries have to come to come at a consensus of what measures to undertake in some areas and how to do it. And the management processes of individual areas of the Wadden Sea Region are explained briefly as follows:

The Dutch Wadden Sea

Since 1980 the Netherlands Wadden Sea is protected according to the key planning decision Wadden Sea (PKB), also called the Wadden Sea Memorandum, which is a national physical planning document defining the overall objectives of conservation, management and use of the Wadden Sea (amended 1993). The objectives and conditions of the Wadden Sea Memorandum are binding upon all state, regional and local authorities. According to the Dutch nature protection law, it is prohibited without permission to undertake activities which destroy and damage the protected area including its flora and fauna or its scenic importance. Within the protected area, some areas have been closed off for the whole or part of the year. This concerns mainly areas which are important for seals and breeding birds. About a quarter of the tidal flats have been closed for cockle and mussel fishery (http://www.waddensea-secretariat.org/trilat/brochure/3protection.html. Date assessed 24/03/07).

The German Wadden Sea

In Germany, the coastal federal states are responsible for the implementation of the Federal Nature Conservation act. Schleswig-Holstein, Lower Saxony and Hamburg have established national parks for the major parts of the Wadden Sea in 1985, 1986 and 1990 respectively. The objectives of the national parks are to protect the Wadden Sea and to allow natural processes to take place with a minimum degree of disturbance and other detrimental effects of human activities. The national parks have been divided into two or three zones of which: zone I embraces ecological valuable areas. Therefore, strict regulations apply to the zone I including prohibition of public admittance. In zone II utilization and activities are allowed under such conditions that the overall protection objectives are not impaired. The national parks are managed by an administrative unity, the national park administrations, which are responsible for the implementation of the provisions of the national park instruments (ibid).

The Danish Wadden Sea

The Danish conservation and planning scheme for the Wadden Sea is a mixture of the German and Dutch approach. The Danish part of the Wadden Sea was designated as a Wildlife and Nature Reserve in 1979/1982, encompassing a zoning system comparable in certain aspects with the German system. In addition, the Wadden Sea, major parts of the Wadden Sea Islands and the adjacent marsh land have been designated as Ramsar Site and a Special Protection Area according

to the EC Bird Directive, which appoints the area with a priority position for regional and sector planning and which furthermore has special implications according to national legislation and administrative regulations. In general, according to Danish law, this ensures the Wadden Sea the highest protection status (The protection of the Wadden Sea in an international perspective). The order has been amended on two occasions; the last one was issued in 1999. The objective is to conserve the Wadden Sea as a nature area of national and international importance. It is, in general, prohibited to undertake activities which destroy or permanently change the natural environment of the Wadden Sea. Strict regulations apply to areas of special importance for seals and birds in which public admittance is prohibited. In other areas, recreational boating and other recreational activities have been strictly regulated. Mussel and cockle fishery is prohibited in the major part of the tidal area. In the remaining areas, particularly the main shipping routes and the area offshore of the Islands, no general restrictions apply (http://www.waddensea-secretariat.org/trilat/brochure/3protection.html. Date assessed 24/03/07).

However, since all these discourses in the Wadden Sea Region are brought about by the behaviours and actions of man, it will be impudent not to acknowledge his impacts. So in light of that, we entail to explore man's impacts in this region. This is because it's only until you know the impacts or problems which affect an area that a need for solutions arise.

4.3.3. The impact of man in the Wadden Sea

Human activities have had adverse impacts on the Wadden Sea ecosystem. The effects of human activities can be classified into three categories, namely: pollution; disturbance and habitat destruction.

- Pollution
- Disturbance
- Habitat destruction

Pollution

The relatively high level of contamination of the Wadden Sea is caused by three main factors:

- A number of rivers, the catchments areas of which are highly industrialized and agronomies, flow into the Wadden Sea. The catchments area adds up to some 231,000 km2. It extends to

the southeast as far as the Chechian-Austrian border. Among the rivers, are the Elbe and the IJssel, a tributary of the Rhine. In addition a substantial part of the Rhine water enters the Wadden Sea via the North Sea through a coastal flow along the Dutch coast.

- The Wadden Sea is a system which imports more sediments than it exports. The sediments originate almost completely from the North Sea and are carriers of heavy metals and other contaminants. Due to the net North Sea current, a substantial part of North Sea sediments - and consequently polluting substances- is deposited into the Wadden Sea.
- The Wadden Sea lies at the rim of north-west Europe. An important part of its contamination is caused by rain and dust which originate from the highly industrialized northwest and central European countries (http://www.waddensea-secretariat.org/trilat/brochure/2impact.html. Date assessed 29/03/07).

The most important nutrients are nitrate and phosphate. Of these, the concentrations of phosphate in the water of the Wadden Sea have started to decrease in the second half of the 1980s, mainly as a result of the use of phosphate free detergent and water purification.
No clear reductions in the amounts of nitrate discharged into the Wadden Sea could be determined. There are indications that this has caused an increase in occurrence of toxic algae. It is not clear whether there are other biological consequences (ibid).

Disturbance

Disturbance is understood to be any activity which, by means of mechanical, visual or acoustical action, interferes with or influences natural behaviour or processes. Disturbance of animals results in a loss of energy and can lead to lower breeding success and lower survival rates. When comparing the different causes of disturbance, some types of recreation, hunting and commercial fisheries, are regarded as having the most impact (ibid).

Habitat Destruction

Through the construction of dikes and other coastal defence works, a considerable part of the natural habitats of the Wadden Sea was lost. In the past 50 years, some 160 km2 of salt marsh was embanked, 43 km2 of which between 1963 and 1990. To date, 346 km2 of salt marsh have remained.
One of the consequences of the construction of dikes and dams along and in rivers and river mouths

has been the disappearance of natural transition zones between salt and fresh water. This is referred to as the brackish water zones. Only one natural estuary in the Wadden Sea is left, the Varde Å in the northern Danish Wadden Sea. Another result of the construction of dikes is the increase of the difference between high and low water, caused by the loss of areas that flood during high water periods. A new threat to the Wadden Sea may be caused by the increased sea level and the increased frequency and intensity of storms, both of which may be the result of the greenhouse effect. These phenomena may cause an increased erosion and submersion of salt marshes and tidal flats. Considerable damage to bottom structures and organisms is caused by the cockle and mussel fishery. One of the most manifest results has been the destruction of old natural mussel beds (ibid).

4.4. Conclusion

The important issues we learn from case studies reviews are that:

Good management and regulation system in the protection area are very paramount. This is so because: if extinct species and the environment in general are to be protected and conserved, feasible, strict and co-ordinated policies have to be but in place. However, if this is to be achieved, acknowledgement of the impacts of mass tourism must be made upon which development of concepts of management of these areas should be made. These management concepts must entail various discourses such as: collaborative action, capacity and consensus building among other planning discourses.

- Ecotourism is one example of a new globalized and networked pattern of a mobile life. Various areas which are engaged in tourism ventures are embracing ecotourism activities which do not only stimulate the tourism ventures but also play a key role in conserving the environment in which it besets.
- The examination of the case of the Belize demonstrates that ecotourism and ecotourists transform local environments into global places to play. This greatly attributed to the fact that various individuals are always attracted to areas which are unique, a way from traffic and noise pollutions, which are characterised of nature and a good environment. As Cohen argues that

> ``in its extreme form, modern tourism involves a generalized interest in or appreciation of that which is different, strange or novel in comparison with what the traveller is acquainted with in his cultural world´´ (Cohen 1972:165,1974:533).

All these findings in the individual areas will be used as the points of reflection, criticism and analysis for the case study area findings of this research report as it was argued before.

CHAPTER FIVE

5. ANALYSIS

The purpose of this chapter is to provide an analysis of the contemporary actual situation in Danish Wadden Sea and Fanø and a discussion about the environmental sustainable tourism aspects in Fanø in relation to various literatures.

The Danish Wadden Sea area lies within the Wadden Sea Region between Germany, Denmark and Netherlands as shown on 1.1 in chapter one. And within the Danish Wadden Sea area, there lays Fanø Island among other Islands. Fanø Island is located in the northernmost Island of the Danish Wadden Sea area as shown on figure 5.1.

> *This area attracts a lot of tourists about 700,000 overnight stays during summer time from especially the 1st of may to 1st of October and about 200, 000 overnight stays for the rest of the year* (Marco: interview: A).

Figure 5.1.Showing the location of Fanø Island in the Danish Wadden Sea Area Source: http://www2.skovognatur.dk/Lindet/nationalpark/Om_pilotprojektet/omraadet.htm. Date assessed 14/02/07

In order to provide a proper analysis in this chapter, we reckon that it's paramount to first explore the various aspects of the Island since it is those elements that will provide the basis for the analysis together with other literatures. And these include:

- The Historical perspective of Fanø Island
- Tourism sector in Danish Wadden Sea and in Fanø
- Urban structure in Fanø Island
- Urban planning processes in this area.

The project group has selected these various aspects above because, if new data is to be developed in any study about any situation or area: which in this case is Fanø Island, it is paramount to first explore its historical perspective so as to determine it's build up area in form of: its housing structures, historical sites, roads networks, etc which findings will form the basis of the conceptual

research findings and avail a yardstick for analysis in the case study area and enable development of new data while avoiding repetition. Also in this endeavour, exploration will be made to determine the significance of the tourism venture in this area: what is its contribution to the economy of Fanø Island, what are the main attractions in this area, how is the venture managed; by whom? How and what are its impacts in the relation to the environment of this area, and what measures have been undertaken either to improve on the positive impacts or prevent or minimise the negative ones.

5.1. History development in Fanø

During the war between England and France in the beginning of the 19th century, Denmark was pushed into this war, and this greatly impacted negatively on the economic situation of Fanø. However, after the war, with new reconstructions, the situation improved especially in shipping sector. During the post war period, Fanø was the second biggest shipping fleet after Copenhagen. Back then, people made a living mostly from fishing and modest agriculture (Marco: interview: A).

Figure5.2.Showing some of the Ships "Rebekka af Fanø" in the Fanø in the early time. Sourcehttp://www.fanoeturistbureau.dk/picture.asp?show=rebekka.jpg&subid=11&menuid=2&medid=22&la=gb. Date assessed 22/04/07

Many seamen signed on German and Dutch merchant ships and whalers to come and trade in Fanø (ibid). And due to the favourable fishing conditions and other business activities, a lot of people were attracted to Fanø as shown on figure 5.3 below.

> *"Around 1890, it was decided by the Danish Tourist Board that Denmark's first international seaside resort be located in Fanø because this area was the 2nd most attractive area after Copenhagen around that period due to a great number of people and merchants who where attracted to this area"* (Marco: interview: A).

Figure 5.3.Showing some of the activities in Fanø in the early time http://www.fanoeturistbureau.dk/picture.asp?show=kongenafdk.jpg&subid=13&menuid=2&medid=22&la=gb. Date assessed 22/04/07

The outcome was "Fanø Nordsøbad", which was the setting of large, fashionable hotels and magnificent villas.

The seaside resort soon became a popular rendezvous of a large international audience. (http://www.fanoeturistbureau.dk/fanoe.asp?menuid=2&medid=22&subid=11&la=gb. Date assessed 22/04/07).

However, around 1910, the shipping fleet collapsed because of the new harbor development in Esbjerg. And due to the developments in the trading and transport systems in Esbjerg, this meant that all the traffic went to the new developed harbor in Esbjerg which is only 120years old, where at that time, there was only a little farming(Marco: interview: A).

Because of the railway network development, it was possible to transport goods over land, and therefore harbor areas on the Island lost there importance in trading. The rail also meant that the tourists from the east coasts like Copenhagen were able to travel very easily to various destinations in Esbjerg and other related areas. However, in the 1970s, as the discussion about the nature of the Wadden Sea Region between Denmark, Germany and Netherlands started to take an aggressive toll and the tourism Venture started to become more modern with new tourism strategies such as a call and acknowledgment of the need for Sustainability of various elements such as birdlife, the environment, etc, various places in the Wadden Sea Region started to attract a lot of people. The Danish part of the Wadden Sea was designated as a Wildlife and Nature Reserve in 1979/1982, encompassing a zoning system comparable in certain aspects with the German system (Koester: 1989).

And over the years, the old seaside hotels have been replaced by contemporary holiday apartment blocks and vacation cottages so as to accommodate the large influx of tourists in this area especially during peak seasons. And since the 1950's, many holiday cottages have been built in Fanø Bad, Rindby and Sønderho (ibid).

In Fanø, the first wildlife reserves were established in 1939 in its eastern side. The relevant legislation for these wild reserves has been revised recently in 1988 by the Ministry of Environment and Energy where by some areas within these wildlife reserves have been declared protected areas (Ministry of Environment and Energy, 1996). Also capacity and consensus building about the various nature elements in Fanø such Seals management under the Seal Agreement have been carried out under the trilateral co-operation between the three countries during their deliberations after every four years so as to evaluate what was done in the past four years and also set goals for the next four years.

Under this co-operation, each individual country come up with individual polices which they discuss and come to a consensus. For instance: how the environment is to be sustained and

conserved by for example measures such as determining carrying capacities of various locations, determining impacts of various tourists mobilities, etc; how bird areas should be protected; how the seals can be managed under the seals agreement by the three countries etc. Under the Seal agreement, the three nations cooperate closely with the objective of maintaining a favorable conservation status for the seal population through common, coordinated measures by different designated authoress in the three nations. For instance in: Demark by Fiskeri-og Søfartsmuseet, Esbjerg; in Netherlands by Alterra, Texel; and by Schleswig-Holstein: Nationalparkamt, Tonning in Germany (Esbjerg Declaration 2001: 26: 31).

However, despite this co-operation, there are always individual differences in for instance the desired methods to be used by individual nations. This is because the problem related to such common arrangements between the states is the fact that there are differences between the countries in terms of legal and administrative systems (Zwiep: 1990). However, to overcome such differences, a Convention on the Conservation of The Wadden Sea Region was drafted by the International Union for Conservation of Nature and Natural Resources (IUCN) in 1974 and submitted to the governments of the three Wadden Sea states (Wolff: 1975). This lead to the development of the Wadden Sea Memorandum in The Netherlands in 1980 and later the establishment of a Nature Reserve in the Danish part in 1982, and finally a National Parks in the German part from 1985. Furthermore, in 1982, a Joint Declaration on the Protection of the Wadden Sea was agreed upon to co-ordinate activities and measures for the protection of the Wadden Sea

And according to the research findings, there are some contradicting arguments about the application of some agreements under The Wadden Sea Region co-operation.

> *For instance, according to Marco: in Germany and Denmark, if there is a seal on the beach, they would leave it there and observe and monitor it, and if it is ill away from its parents, they shot it because they argued that the population is big enough, and killing one will not cause any harm. While in Netherlands they will try to bring back the seal in Wadden Sea seal habitant area, treat and feed them.* (Marco: interview: A).

However, the common goal of the co-operation is always to protect natural heritages and their habitants by all the 3 countries. And to engage all stakeholders in decision making processes about different aspects of the Wadden Sea Region, the member countries exercise regional co-operation because this is were the lower political levels of an area can participate in the discourses and

deliberations of management of the various resources in an area. There is the European Union also plays an enormous role in the Wadden Sea Region policies.

5.2. Tourism sector in Danish Wadden Sea and in Fanø

The Wadden Sea Region is visited by between 8- 10 million tourists (44 million overnight stays); the number of tourists in the Danish Wadden Sea is around 2- 3 million tourists. Most of whom are families and senior citizens from the Wadden Sea countries (Progons: 2004).

From an economic viewpoint, tourism is very significant, generating about 8 to 10% jobs in the Danish Wadden Sea. The domestic tourism markets in Danish Wadden Sea could be separated into four different main segments, which differ in the offer target groups and types of services (ibid).

- **Cultural tourism**: this is one of the main incentives for foreign travellers, which is associated with visiting places of historical aspects. Elements of this kind of tourism can be traced in some parts of The Wadden Sea Region for instance in Fanø around the 1880s were, it was argued that at some point in time, it appeared as if time had stood still in this place, where by people had myths such as a believe that it was only allowed to swim in the sea on only three days and for only 15 minutes, otherwise it would be dangerous if individuals acted otherwise (Marco: interview: A).
- **Trade from travel**: this kind of tourism is becoming increasingly important in the Wadden Sea as destinations for trade fair travel, conferences and seminar.
- **Holidays:** this kind is based on events and attractions, like visiting amusement parks, museums. Different tourist attractions are found in The Wadden Sea Regions. For instance in Fanø there are bird grazing and nesting areas, a very old wind power mill, the long stretching sand beach, etc.
- **Nature and countryside:** combined with health and fitness tourism like holidays in the countryside with a combination of relaxing activities. For instance, on the Fanø Island, there exist a lot of Dune heath lands. These are mosaic of plains and uplands, covered by carpets of various plants. They offer wide spaces for hiking, commuting, wild birds and seals life viewing, etc which attract a lot of people to come and see, view or study them.

The tourism sector in has experienced a very dynamic development in the Danish Wadden Sea; the accommodation capacity has almost doubled in the last 25 years (Progons: 2004).

Number of overnights stays in million			
Sub Region on Wadden Sea	**1995**	**2000**	**development 1995 -2000 in %**
German Wadden Sea	20.5	20.7	0. 9
Danish Wadden Sea	8.7	10.1	16.1
Dutch Wadden Sea	13.1	13.3	4.2

Figure 5.4.Development of overnight stays 1995 to 2000 in selective regions in Wadden Sea. Source: (Progons AG 2004 according to official national statistic and toer data noord 2003).

The figure 5.4 above, illustrate the significance of the tourism Venture especially in the Danish Wadden Sea(DWS) area where there is the highest rise in overnight stays from 8.7millions in 1995 to 10.1million in 2000.

This rises results into both positive and negative impacts in different areas of the WDS area and among the positive ones are: more employments for various individuals from various areas especially in the peak season between the month of May and October, more sales by the local shops, more developments in terms of vacation houses, hotels, etc (Marco:interview:1)

However, these rises also leads to different negative impacts such as increased pressure on the landscape in terms of construction activities and disturbance to the natural wildlife by the large influxes of tourists. And because of these pressures, there arises problems like water sewage, emigration of birds, development of new unknown plant species, etc (Progons, 2004).

The Danish Wadden Sea tourism market is different from the Germany and Dutch tourism market. In Denmark the dominating form of accommodation is summer cottages market share of overnight stay of 50 %, followed by camping 25 %. The tourism sector in the Danish Wadden Sea has a total annual turnover of 1.7 Million Danish crone[3] in southern Jutland (ibid). And some of the impacts of these rises can also be seen on the Island where as of today, the number of overnights is 1.2 million (Marco: interview: A).

5.2.1. Tourism sector in Fanø

The first tourists came to Fanø about 100years ago, most of whom were Germans, and guest citizens from Copenhagen and other bigger cities of demark. They came for the possibility to swim in the sea. This was so because people from Copenhagen, other parts of Denmark, and other parts of the world thought that the people in Fanø were very exotic, that time had at a time stood still for

[3] According to cowi, 2003

them for some years. They were not modern at all at that time. Traditionally, people were not allowed to go in the water very often. And that if they were to go swimming, it was suggested that they go for just 15min on only three days of the week and get out as it was argued before. Because it was thought that the sea was dangerous (Marco: interview: A).

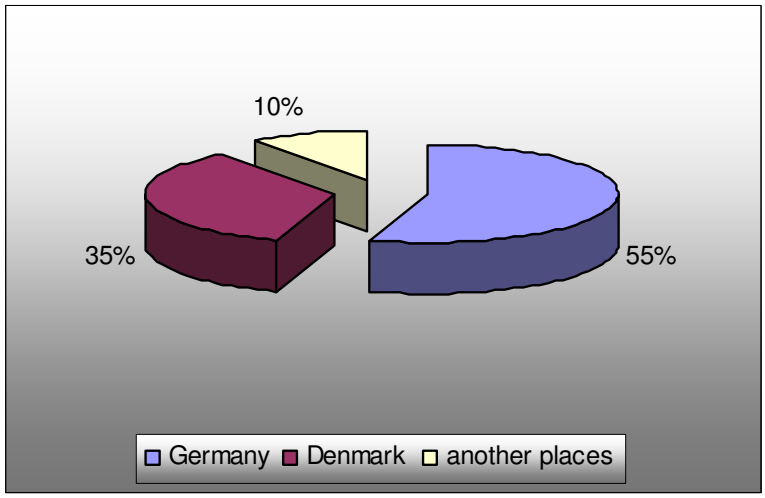


Figure 5.5.Showing the percentages of tourist to Fanø from different areas.
Source: (Marco: interview: A. 2007) and Group 07um1001

As of today, the percentages of tourist to Fanø Island from Germany, other parts of Denmark like Copenhagen, Esbjerg and south of Jutland etc, and from other countries like England, Norway etc are as follows as shown on figure 5.5 above[4]. And most of the tourists from Germany and other areas of Denmark come by car while others come by trail to Esbjerg harbour, and then they take a ferry from there to Fanø Island whereas these from other countries such as England come by ship or plane to Esbjerg and then take a ferry to Esbjerg.

Fanø Island has always been an attractive area. For instance in the 1920s, there was a car race on the beach and this was very popular at the time until a boy died of an accident. The incident nearly repeated itself when one investor tried to revive the races in the 1970s. A journalist nearly died. In the beginning of the 20th century, there was emergence of other sports grounds such as: golf courses, tennis clubs, etc. The Golf club in Fanø is little more than 100 years old and it was founded by Germany tourists (Progons: 2004).

All these sports and recreations attracted a lot of people over the years, and it is because of these activities as to why there has been a boom in development of a lot of infrastructures such as hotels, vacation cottages, roads, development of regulations on access to specific areas such as: wild bird areas, etc. This as of today attracts mostly senior citizens and young children who normally come with there parents.

[4] Figure 5.5 is based on quantitative data from the interview A:

And as it is shown on figure 5.6, with reference to the available data, the number of summer houses has been rising from 1993 to 2002 from 2577 to 2750[5].

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Total	Average
Summer housing	2577	2592	2620	2643	2665	2679	2707	2722	2733	2750	26688	
Summer housing development	No data	No data	No data	29	33	24	15	25	11	14	151	21,6

Figure 5.6Showing the numbers of summer housing in Fanø in last 15 years and number of new development.
Source: Fanø Municipality: 2004

From the data above, this shows that the number of summer houses has been rising constantly as illustrated on figure 5.7.This rising has been greatly attributed to the enormous summer housing developments for both private use and commercial use. This rise has been also boasted by private house owners who rent out their houses during different seasons of the year. Most of these summer houses are located in Sønderho and Nordby. In addition to these, there are also small hotels with a capacity of 3500 beds and a camping place which can house over 2500 persons in Fanø (Fanø Municipality: 2004).

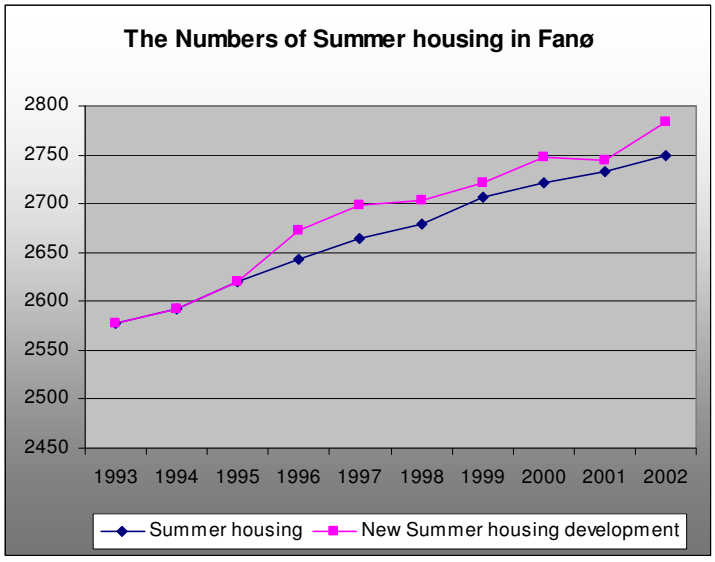


Figure 5.7.Showing a constant rise in summer houses development from 1993 to 2002 in Fanø
Source: Group 07um1001

All these developments show the significance of the tourism sector in Fanø. However, as it was argued before, not all seasons experience a great number of tourists, this implies that most

[5] Fanø Municipality (2004)

participants in the tourism sector in Fanø experience a non favourable business atmosphere in terms of clients, and as such, they earn none or very less revenue compared to those earned during the peak season between May and October. However, strategies have been developed through consensus by the various stakeholders such as restaurants owners to ensure that they each at least get clients in the non peak season.

> *According to Marco: "it is agreed upon by restaurant owners in Fanø that one restaurant should be open for business each day, so that instead of distributing the relatively very small numbers of clients, and then make losses in terms of un sold foodstuffs, beverages, etc by individual restaurants, each restaurant gets all the clients on a specific and others wait for their turns. And this way, the losses are minimized"* (Marco: Interview: A)

Even some of other business owners in Fanø argue that because of this kind of business atmosphere, especially the non peak season, they have engaged in establishing other businesses in especially Esbjerg.

5.2.2. Why do people travel to Fanø?

Here we entail to illustrate various locations which attract various groups of people to Fanø.

In Fanø you can find a lot of attractive areas. The figure 5.8 below illustrates different attraction area in Fanø:

Picture 1 show the birdlife protection area near the Fanø beach. In this area, it is not possible to go by car because the area is only accessible by foot and horses since a large part of this area is covered with sea sand. This area is characterised of very short grass covering a wide spread area. There exist drainage trenches of waste products from different structures around the area signifying the possibility of contaminations to the ground in this area. This leads to growth of new wide plant species in this area.

Picture 2 shows some of people walking on the sand beach which stretches for miles. This area is a great attraction to all groups of people. Just like in the ancient ages, people are still attracted to the sea very much. However, there is small believe in the ancient tales that the sea is dangerous, and in this age of technology, with development of speed boats, pressure tubes, etc people are no longer afraid to go in far waters. This place is also used for beach volleyball competitions and kite surfing among other uses. This area attracts a lot of people especially in summer time.

Picture 3 shows the oldest wind power in the Fanø, this area attracts a lot of tourist to visit the first wind power in the area.

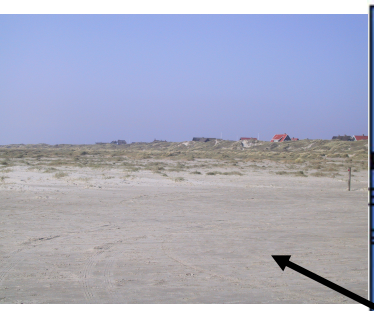
Picture 4 shows the ship from Esbjerg to Fanø this ship comes 4 times in every hour; this is the main means of transport to come to this Island. However, this kind of transport faces a problem of rising levels of sand in the sea, and because of this problem, poles demarcating the safe path way in the water are put in place in the sea so as to enable safe navigation in the waters between Esbjerg and Fanø Island.

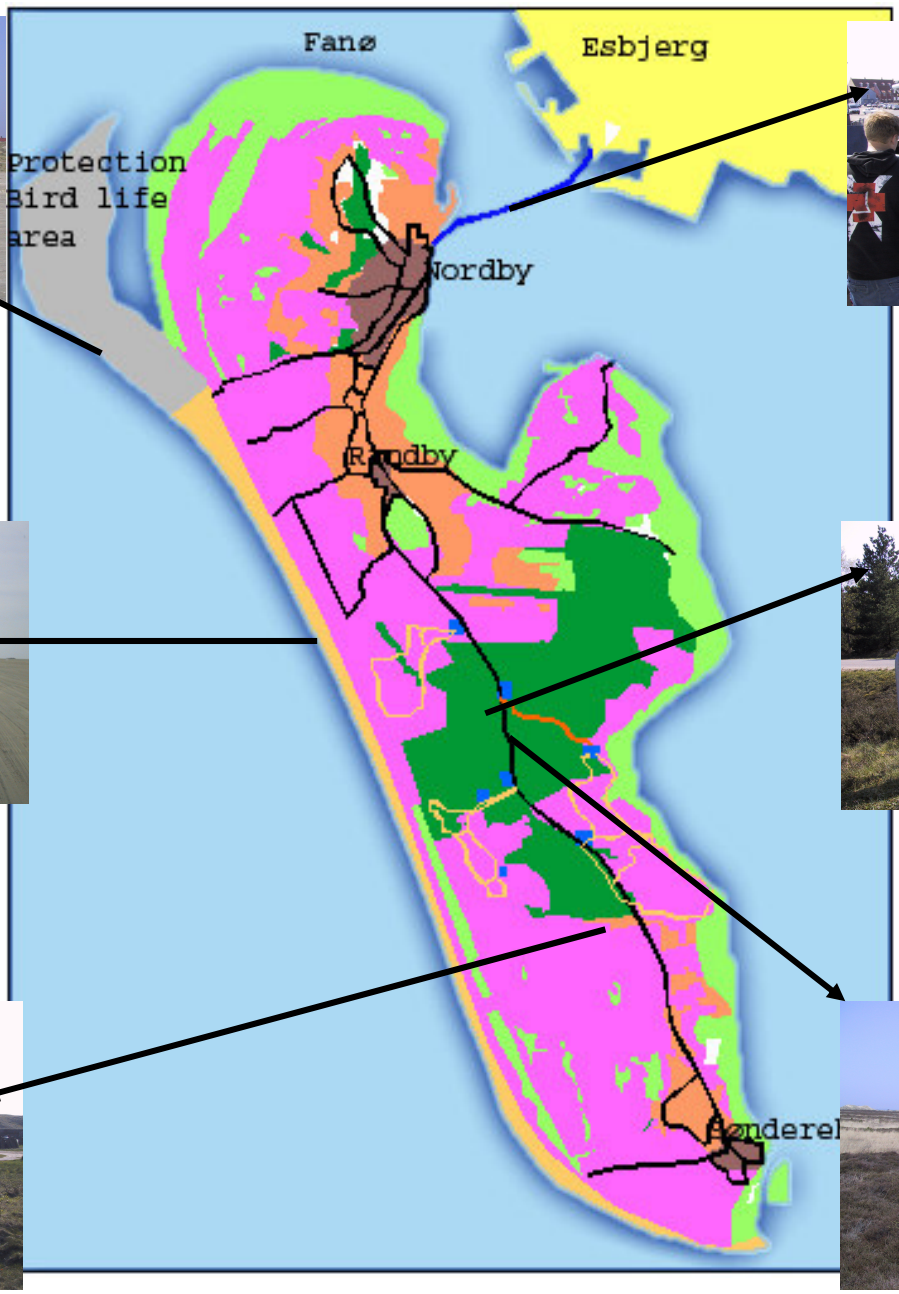
Picture 5 and 6 shows some of the signs in the Island about fauna and Lora protection areas. Most of these areas are not accessible by car or bicycle. Individuals have to commute mostly to them.

All of these areas attract various groups of people in different seasons, and as such they experience various attentions from various stakeholders in Fanø about what policies to put in place and follow-ups on projects being undertaken in the various areas in relation to various issues namely: Sustainability", "Nature and Recreational Activities", "Culture and Cultural Tourism", "Accommodation" and "Mobility".

Picture 1

Picture 4





Picture 2

Picture 5

Picture 3

Picture 6

Protection area (Birdlife area)

Fanø Golden starnd

Forest area

City Center

Tourist building and activities

Hirtage area

Figure 5.8Showing the attraction areas in the Fanø Island.
Source: Group 07um1001.

5.3. Urban structure in Fanø

The structure of the city is defined by various linkages between elements within its urban activity. These could be competitive, complementary, or even ancillary to territory within the city. This structure has order and in turn this order has spatial character.
The four large city communities are characterised by different architectonic features. Varde is the classical city, Esbjerg and Fanø are the historical cities, and Ribe and Tønder are the Middle Age cities. The smaller cities and villages also have specific characteristic features (http://www.kulturarv.dk/kulturarv/vadehavet/eng/conference2006/results.pdf. Date assessed 29/04/07).

5.3.1. Building structure

There are four major old cities in the Danish Wadden Sea Region Varde, Ribe, Tønder and Fanø all of which are located a long the large river valleys. Esbjerg is the youngest and largest city – planned and established in 1868 at the edge of the hill Island Esbjerg Klevb (Ibid).

The structure of the hinterland in Fanø Island, the course of the roads and the building structure of the villages have more or less not changed in the last 100-200 years. The old urban communities, which share the common background for their location and development, are partly still connected to the sea and the marsh.
In the Fanø Island (Danish part of the Wadden Sea Region), there are large summerhouse areas at Nordby beside the Sea, Rindby and Sønderho in south part in the Island. The reason for this locations among others, is that the recreational buildings should be potentially located near the attractive beaches
Nordby, Rindby and Sønderho are all situated in Fanø Island. All cities have a distinct history as important shipmaster towns and in all towns there are large summerhouse structures.

The population of Fanø is 3169 people, of which 323 people live in Sønderho and the rest 2846 live in Nordby (Fanø Municipality 2004).

Nordby

The main city in Fanø is Nordby. This is the biggest and important city on the Island because almost all of the of attraction service like tourist office, Municipality, the main city centre and market area are located in Nordby. Figure 5.9 shows urban structure distribution in the Nordby. The yellow coloured abstract is the city centre with most of the most important services for the local population as well as for the tourists on the Island. The orange colour shows tourist developments most of which is concentrated near the sea, but at the same time, you can find some of services like school and hospital in these zones. The light brown colour shows some of the farms on the Island.

Correspondingly, the buildings along the sea in the Fanø have

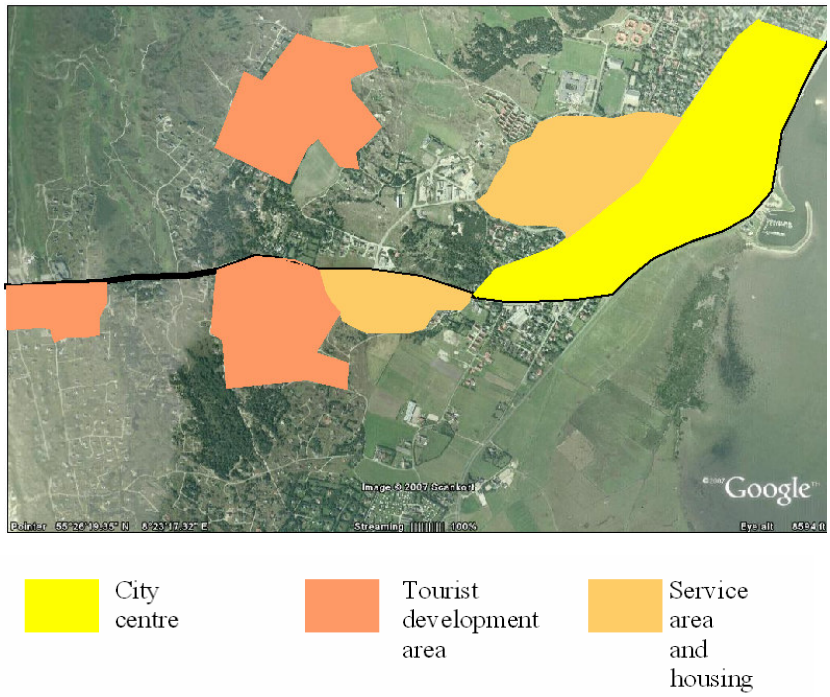


Figure 5.9.Showing the urban structure in Nordby biggest city in Fanø Island.
Source from Google earth and Group 07um1001.

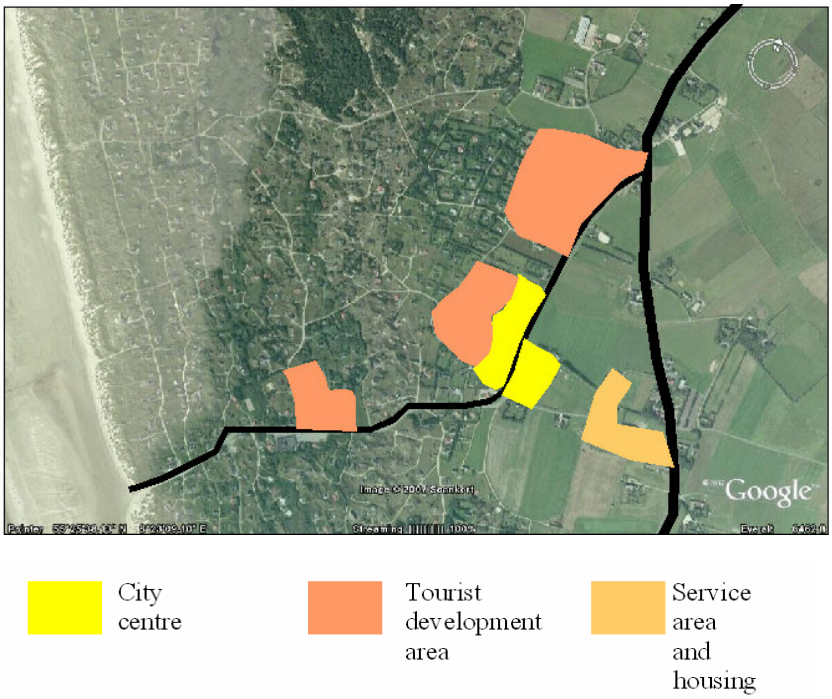


Figure 5.10.Showing the urban structure in Rindby city in Fanø Island.
Source: Goggle earth and Group 07um1001.

been located on the edge of the dry land while the meadow areas are used for cattle for cattle grazing (http://www.kulturarv.dk/kulturarv/vadehavet/eng/conference2006/results.pdf. Date assessed 29/04/07

Rindby

The second city in Fanø is Rindby. The figure 5.10 above shows that there are a lot of tourist development activities near the sea because Rindby is a very close to the sea, but on the another hand, different services and city centre are a very close in the middle of the city.

Rindby city is part of tourist Venture in the Island, because a lot of tourism development building in this part of Island.

Sønderho

The third city in Fanø is Sønderho as shown in figure 5.11. This covers the largest area of the Island it is an important city like Nordby. Its population size is 323 people. Sønderho city has a lot of attractive areas like bird life area, Fanø Museum and the oldest wind power.

In general, the urban structure form of Fanø Island has gone through a lot of changes in the last 10 years, largely as a result of a lot of tourists coming to the Island from various parts of the world especially from Germany, Copenhagen, from other cities of Denmark, UK, etc as it was shown before.

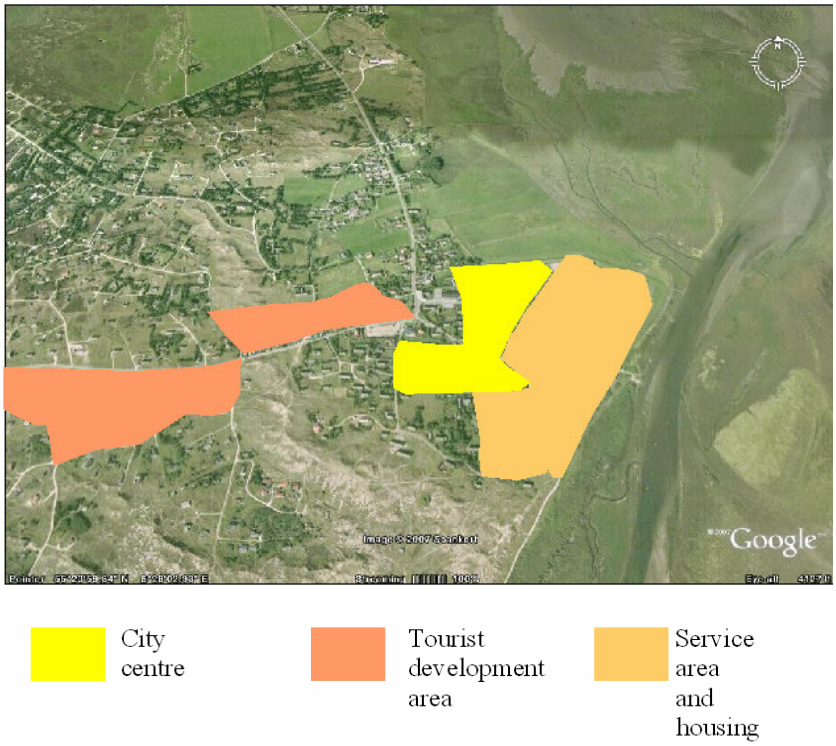


Figure 5.11.Showing the urban structure in Sønderho city in Fanø Island.
Source: Goole earth and Group 07um1001.

5.4. Urban planning processes in Danish Wadden Sea

5.4.1. Nature Protection

Denmark has a highly decentralised system of public administration, with a high level of public participation and increasing sector integration. The ministry of Environment and Energy is the national government department responsible for environmental and planning policy with support from other bodies such as the Danish Environmental Inspection Agency, individual Municipalities and other stakeholders.

The general laws in Denmark relating to natural conservation do incorporate some regulations that directly influence the administration of the coastal zone such as for instance: the Nature Protection Act 1992, which was amended in 1994 and 1997 which establishes a 300 metre protection zone along Danish coasts; the Summer Cottages Act of 1972 which was introduced to control the expansion, and regulate the use of summer cottages along the coast. The Environment Protection Act gives county councils the responsibility of the quality of water up to a 6 metre depth or 1 nautical mile offshore.

On the other hand, the National Forest and Nature Agency, under the Ministry of Environment and Energy, has the overall responsibility for the protection of the International Nature Conservation Areas (Ramsar, EU Bird Directive, and EU Habitats). The County Councils administer most of the regulations (Common Wadden Sea Secretariat, 2001).

They carry out inspections, issue permits and refusals, carry out maintenance tasks, monitor, and plan and disseminate information. Some regulatory measures worth mentioning include a ban on changes to the natural conditions in salt and freshwater marshes, bogs and other areas, a 300 meter general protection zone along the coast and conservation regulations for protected dune areas. Besides the Danish Nature Protection Law, the most significant nature protection regulation in The Wadden Sea Region is the Executive Order on Nature Conservation and a Wildlife Reserve in the Wadden Sea.

This executive order covers large parts of the Danish section of The Wadden Sea Region, and is an expression of efforts to establish sustainable development for the region as a national and international nature conservation area as well as a way of ensuring that Denmark meets its obligations for the area including those under the EU Bird and Habitat Directives (ibid).

The Executive Order also falls under the jurisdiction of the Ministry of Environment and Energy and the National Forest and Nature Agency.

The provisions of this order make it possible to involve other authorities, such as the Ministry of Transport and the County Councils. Finally, the Danish system of planning regulations and inter-sector spatial planning is carried out in practice with regard to the areas that border the Wadden Sea. Such planning results in the definition of a framework for future development, which is expressed in guidelines for the administrative procedures of the regional and local authorities (ibid). The general public is always involved in the planning procedure just as it is widely exercised in other Danish planning procedures to ensure consensus building. However, in certain situations the planning act also dictates that larger construction projects should be subject to an EIA (environmental impact assessment) (Common Wadden Sea Secretariat, 2001).

5.4.2. Environmental problems in Fanø

The high levels of pollution and disturbance on Fanø Island are caused by three main factors as illustrated on figure 5.12 below.

- The main problem is caused by the poor management of the sewage system from various vacation and residential areas. This problem is experienced especially in areas marked by three multiple bright yellow colours on the figure.

- In protected bird life areas, the biggest problems in this area are the tourists who especially come with dogs. Some tourists and the dogs distract the birds because they can't stay in line during the tours in specific bird viewing areas. Most of these birds emigrate from southern areas of Europe. Another problem in this area is the foxes which

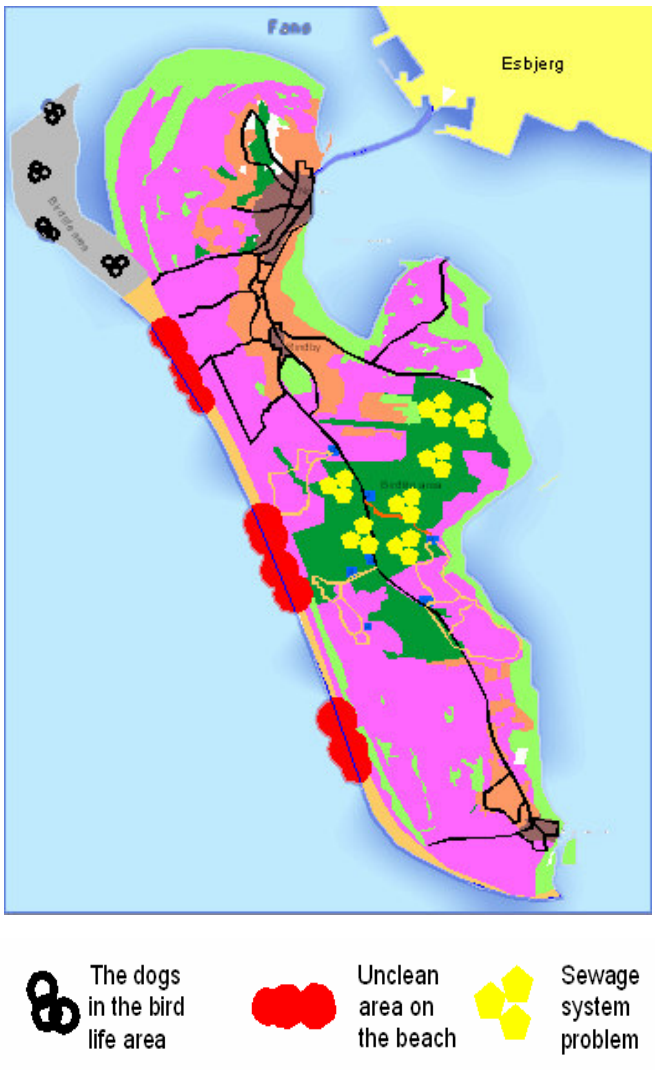


Figure 5.12.Showing different environmental problems in Fanø.
Source: Group 07um1001.

too distract and eat birds ((Marco: Interview: A), these distractions are experienced especially in areas marked by black multiple colours on the figure.

- On the golden beach area, the main problems are a lot of unclean area plus the kite surfers who disturb most of the tourists at the beach.

These problems are experienced especially in areas marked by red multiple colours on the figure 5.12 above.

It is often a good as well as a bad thing when new species and developments happen in an area. This is also true for the case of Fanø because, due to the sewage problem, new plant species are developing which are displacing the former natural species. At the same time there is noise as well as air pollutions in some areas where construction developments are undergoing on the Island. This can have far-reaching biological and economic consequences.

The lack of available knowledge of these species, their large populations and abundance in Fanø, and the capacity to accumulate persistent contaminants, make them a sensitive issue to the environmental managers.

(http://www.waddensea-secretariat.org/news/documents/bird-eggs2001/3-Report2.pdf. Date assessed: 07/05/07).

5.5. Conclusion

We try in this part to give a brief conclusion to some of various aspects in this chapter:

- From historical view, Fanø has under gone through a lot of changes from being the 2nd largest shipping harbour area around the 19th century, to an Island which is now relaying mainly on tourism due to developmental changes in the Wadden Sea Region and other areas such as Esbjerg as it has been argued above.
- Fanø Island is characterized of different attractions which over the years since 1980s have changed the tourists' views to this area from cultures to nature attractions such as birdlife and the beaches, etc. This area attracts a lot of people, due to its natural heritages. This in the long run, over the years has contributed to increased pressure on land use among other impacts, whereby a lot of summer houses especially in Nordby and Sønderho have been built to accommodate the tourists. This has resulted to pressure on for instance sewage and water systems, pressure and disturbance in use of various locations such as bird nesting

areas by the tourists, pollution due to the sewage and massive housing constructions in various areas etc.

- And since tourism is the main trade on the Island as of today, then, an effort must be done to plan well, protect, sustain, and conserve the product through for instance: encouraging more collaborative action and co-ordinating research findings, encouraging ecotourism, practicing tourism sustainability through employing ecotourism and carrying capacity measurements which does not only focus on the economic benefits but also on the sustainability of the environment and natural aspects upon which this trade exists.

And since the objective of this study is to determine how the environment can be sustained and conserved, we entail to explore the concept of carrying capacity application in-depth in Fanø Island, so as to evaluate and ascertain its feasibility in Fanø Island. This is mainly because, during this research exploration, it was found that the less emphasis has been put on this concept compared to the concepts of ecotourism and tourism mobilities and their impacts in Fanø as regards to environmental sustainability. Yet the concept of carrying capacity is also a major strategy of environment sustainability which is applicable is a lot of areas, be it housing or protected areas.

CHAPTER SIX

6. CARRYING CAPACITY MEASUREMENTS IN FANØ

In this chapter, the project group entails to explore and analyse whether and how the concept of carrying capacity has been applied in sustenance and conservation of the nature and environment of various areas in Fanø.

The concept of carrying capacity assessment, as a management technique was introduced in the 1960s as a method of numerical, computerised calculation for defining land use limits and imposing development controls in an objective way (Clark: 1997).

Contrary to the notion of finding a single number by different proponents of various schools of thoughts which could act as the limit beyond which a specific area could be utilized, contemporary studies like according to Gezt (1982) and Butler (1996) have shown that carrying capacity to be denoted by a single number is not a sufficient yardstick to be the basis upon which a specific area is utilized and as such, various scholars have argued that carrying capacity should be used as a process but not a means for sustenance of specific areas. This can be viewed in the case of Fanø because they do not have a specific number of users of any specific area (Marco: interview: A)

In any locality, there are always strong relations between society, economy and the environment because these three aspects are interlinked in one way or another. The environmental and other geographic features normally create location advantages which attract various groups of people such as tourists, academies, and economic activities such as infrastructure developments, employment opportunities, etc. Besides the positive impacts that arise due to these human activities and their patterns of living, these activities also may impact the location in question negatively in terms of natural and environmental aspects to the extent that such impacts may effect significantly the structure and dynamics of local human and natural ecosystems. A critical issue in this perspective is the capacity of a system to assimilate change, which brings forward also the notion of its thresholds or limits to utilization. This is the conceptual basis of carrying capacity in tourism planning and management (Defining, measuring and evaluating carrying capacity in European tourism destinations: 2000).

6.1. Methodology for measuring tourism carrying capacity in the Fanø

In Fanø, the number of tourists has recently increased to over 1.2 million overnights per year[6]. In 2004, the Danish government carried out research study of a proposal to transform the Island from a

[6] Look Appendix: A:

protection area into a National park. The Fanø Municipality together with Tourist offices drew up a long term plan with integrating policies for agriculture, nature protection and tourism development plans. These were based on the findings developed from what limits the landscape and various urban structures such as hotels, vacation houses, school, etc can accommodate. The limit to the number of beds in the tourism sector had been drawn at 350,000[7] (http://www.sns.dk/nationalparker/english.htm. Date assessed 15/05/07).

On the basis of the main dimensions of development and environment interface, following a systemic analysis, the impacts of tourism in Fanø Island can be analysed in terms of three major axes: physical environment (natural and man-made including infrastructures), social (population and social structure and dynamics) and economic (including institutional and organisational). These provide the basis for analysing and assessing tourism carrying capacity in terms of main and distinct–but interrelated- components (Defining, measuring and evaluating carrying capacity in European tourism destinations: 2000).
The different axes are explored, discussed and analysed according to the research findings in the figure 6.1 below.

[7] Look Appendix A:

Measuring tourism carrying capacity for the physical ecological components	Measuring tourism carrying capacity for the socio-demographic components	Measuring tourism carrying capacity for political- economic components
The analysis of Physical Ecological components in Fanø: Fanø Island is a coastal dynamic area and at the same time it is a natural and culture area. But on another hand, it is also a protection area which is undergoing various discourses between the Danish government and different stakeholders so as to develop consensus about transforming Fanø from protection area to National park. This area has various aspects and these are: **Bird life in Fanø:** The Fanø Island is a big wild life area to a lot of Birds. Some of the birds in this area travel for up to 20.000 km from different areas to Fanø and other parts of The Wadden Sea Region. The number of water birds in transit in Danish Wadden Sea ranges between 10 – 12 million birds. Larges flocks follow them in August, when the Wadden Sea larder is appropriately fully stocked. The last birds leave the Wadden Sea at the end of October (Wadden Sea & marshland: 2005). **The seal in the Danish Wadden Sea:** There are about 3.000 common seals in the Danish Wadden Sea, but in Fanø alone, there are about 200 seal (Ibid). **The dune and forest in Fanø:** The dune and the forest in Danish Wadden Sea stretch all along the Jutland west coast from Rømø and Fanø Island. The dune and forest in Fanø are young, strong and dynamic. The flora and fauna are very rich in Fanø. There are about 65% in the area (ibid). It's because of these elements that a large number of people are attracted to this area. And as such, if these kinds of ecological components are lost, or forced to migrate away from these area due to aggressive human influxes and activities, this will not only affect the tourism venture, but also the environment itself of this area.	The analysis of the socio-demographics components in Fanø **Population growth in Fanø:** In 2004, the Fanø Municipality carried out a population growth study in the last 10 years. The project group found out that there were no drastic population changes in Fanø. It was found that in 2003, the population was 3169, in 2002 it was 3212 and in 2001 it was 3214. And no too much differences with the other years. (Fanø Municipality: 2004). This shows that the large numbers of people who migrate to this area especially during specific seasons, are temporary residents mainly tourists. **Cultural patterns and Social relations in Fanø:** About 85% of the people in Fanø work and depend on the tourist Venture and the rest work in either farms local industries or in different employments in Esbjerg. According to the population growth in chapter 5 (from Fanø Municipality), the number of local people in the area is becoming less and less, because some members of the local communities are immigrating to Esbjerg. With these patterns of population and migration aspects, it's clear that the Fanø tourism Venture can not survive on only the local population.	The analysis of the political and economic components in the Fanø **Political movements in the Danish Wadden Sea and Fanø:** Since 1978, the Governments of Netherlands, Denmark and Germany have been working together on the protection and conservation of The Wadden Sea Region. This trilateral co-operation covers management, monitoring and research, as well as political matters Furthermore, in 1982, a Joint Declaration on the Protection of the Wadden Sea was agreed upon to co-ordinate activities and measures for the protection of the Wadden Sea as it was argued before. In 1997, a Trilateral Wadden Sea Plan was adopted. Management in the Danish Wadden Sea is done under a Zoning system under that environment ministry of the Danish government (Folkert de Jong: Interview: 2) **Danish Wadden Sea as a National park:** In 2005 the Danish government came up with a proposal to transform the Danish Wadden Sea into a National park just like the Germany Wadden Sea area. It's argued that the main objective of transforming the Danish Wadden Sea area into national parks in Denmark is to create a large, coherent nature area with natural and semi-natural areas which can improve and safeguard nature with a rich biodiversity and beautiful landscapes, and also improve access for more public recreation and natural adventure (http://www.sns.dk/nationalparker/english.htm. Date assessed 15/05/07). Some stakeholders such as some hotel owners second this proposal because they argue that this will earn them more incomes if more recreations are setup which will attract more people whereas others like the environmental activists are against this proposal because, according to them, if the area is transformed into a national park and easily be open to new developments, these developments will destroy the environment and its natural wild lives and yet these are the attractions to this place.(Marco: Interview: A).

Figure 6.1.Showing the main elements in the measuring of tourism carrying capacity in the Fanø.
Source: Group 07um1001

6.1.2. Implementing Tourism Carrying capacity in Fanø

There are no specific numbers about carrying capacity in Fanø. (Marco: interview: A) The concept is not aggressively applied in Fanø because the number of users of several places are not too many, and as such, focus is put mainly on other forms of management such as monitoring the activities in various areas, and educating tourists on the impacts of their activities such as: excessive access to sensitive areas such as bird areas; the impacts of their activities such as kite surfing to other users of various areas such as the beach, pollution from: use of private car; sewage, etc in various areas whether on the Island or other areas (ibid)

And as such, carrying capacity measurements in Fanø, though it's not based on specific number of users of various places, could be used as a guideline in the environmental management in various areas. From the study group point of view, the management of different areas in Fanø could be further done effectively through zoning of different areas as illustrated and shown on figure 6.2 below:

Zone A. Bird life and Heritage area:

It covers the most part of Fanø which requires absolute conservation. Accessibility by visitors is only possible on foot. This zone can accommodate a lot of visitors due to its size, but still conservation in terms of visitors movements in the area have to be regulated if tourist's satisfaction is to be enhanced.

Zone B. Nature Forest:

It covers an extensive 'green' area that needs to be conserved. However, there are human activities taking place in this area. Traditional activities like agriculture, forestry and sheep farming, are allowed under the control of the protection area authorities. Visitors can walk or ride along specific routes; motor vehicles are allowed only on the roads authorised by the Municipality. This zone can accommodate more people as long as the forest and wetlands are conserved which act as filters of different habitual wastes and vice verse.

Zone C. The Beach:

The golden beach as referred to by Marco and other recreation areas marked as zone c: These consists of a typical beach environment and open public spaces in which tourists and local people can exercise different leisure activities. The zones attract a lot of people both from the local community and internationally.

There carrying capacity in terms of users are very high especially during summer time due to the activities which are undertaken there. Access to these areas is unrestricted. It's even possible to travel in some parts of this area by car.

Zone D. New Development Extension: Tourist development area: it consists of an area with villages whose historical centres are being restored and revitalised. There are also picnic areas, animal reserves, visitor centres and nature trails. These zones allows for the development of cultural and recreational activities for local communities and visitors. These zones experience a lot of pressure because of a lot of activities that are being undertaken in these areas. However, according to the research findings, these zones can still accommodate more actives which can lead to more economic development of the area. However, despite the contemporary benefits from the various developments in the area, there have risen numerous negative impacts

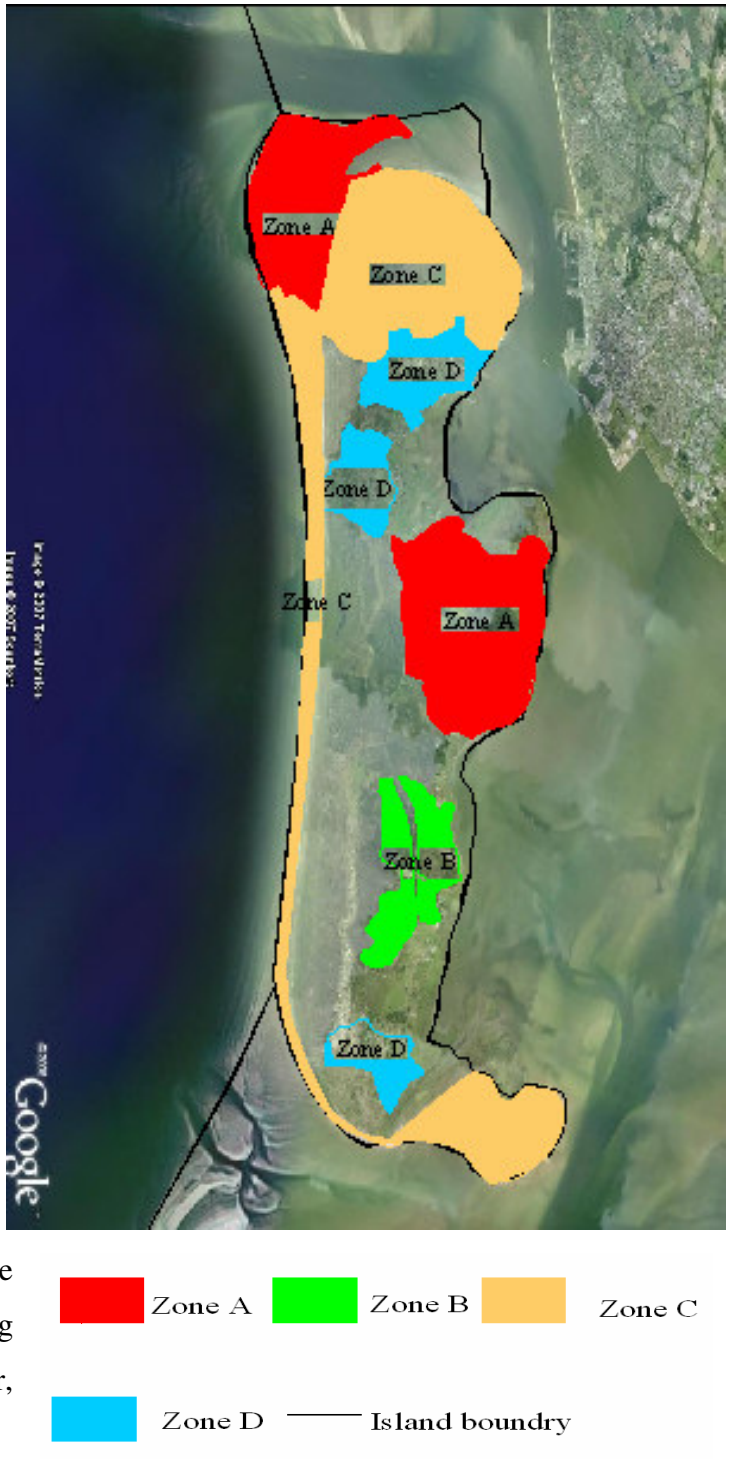


Figure 6.2.Showing carrying capacity zoning in Fanø. Source: Group 07um1001

which require serious management especially the sewage problem arising from a lot of waste from numerous households, hotels and vacation cottages.

6.2. Conclusion

According to the research findings above, it was found that the concept of carrying capacity was not very much applied as a means of management of various environmental impacts as a result of tourism in Fanø Island. This was based on the argument that: "the number of users of various places varies and is not very much that it necessitates determining the precise number of users to determine the capacity of utilization as a means of management in those various places ". However, other initiatives are applied to check on the utilization of various places for instance: through monitoring of various activities in various areas; carrying out guided tours; etc (Marco: Interview: A).

On the other hand, it was also argued that, it's not the number of users that should be evaluated in Fanø Island, but the impacts of the high rising permanent structures such as: summer cottages and other vacation houses, etc. And since their impacts can not be regulated basing on a single carrying capacity number, this regulation and management could be done through for instance: proper house planning and management of the related systems such as water and sewage systems among other feasible strategies (ibid).

And according to us, the other feasible management strategies could be zoning of various areas, and availing information about their components, usages and restrictions. This can provide an effective measure of management and sustainability in addition to the determination of the carrying capacity of the individual zones which could be used as a basing for future planning. Thus, since growth is inevitable in Fanø Island, and that carrying capacity measurements do not only focus on regulating basing on only numbers of users but also on other aspects such as the: economic, social, cultural aspects among others, its paramount that these measurements are put into consideration and applied where necessary in especially in very sensitive areas such as the seal viewing areas. And as such, these arguments will be used in the discussion and development of recommendations for environmental sustainability in Fanø Island in the latter chapter.

Fanø Island is still tolerable apart from a few areas which are characterised by for instance large housing concentrations with poor sewage management; there is still enough room for tourists in Fanø.

CHAPTER SEVEN

7. DISCUSSION, CONCLUSION AND RECOMMENDATION

The objective of this chapter is to answer the research questions which where stated in the problem formulation in the introduction chapter.

7.1. Discussion and Conclusion

Unlike in other tourists' destinations like Havana, Thailand, etc, whose tourists Venture is mostly catalysed by the sex Venture, beaches, etc, some of which have become to be denaturalized as heaven on earth and virgin paradises by scholars like Sheller (2003a: 2004), Fanø like other areas of the Wadden Sea Region is characterised mainly of heritage wildlife such as bird watching sites, exotic flora, beaches, Dunes, kite surfing areas, etc. These elements are the main attraction of tourists to this area.

Most tourists are attracted to places like Fanø even before they get there by for instance just looking at a tourist brochure of this area from for example: the internet, a tourist bureau, etc. From the brochure, different demobilisations and remobilisations such as the information and images of a clean environment, exotic culture, less noise pollution from urban traffic, nature and wildlife, etc in this area are portrayed. These eventually entice an individual to book his or her next vacation in Fanø, just like other people are attracted to various areas like in Africa, Asia, Mediterranean, Caribbean, etc for the need to experience new kinds of cultures, experience wild nature, to carry out research, etc.

However, these movements results into different impacts such as: traffic and pollution from fossil fuel (by car, aeroplanes, etc); adoption of new foreign cultures by both the local people and the people visiting; poaching of wild animals; increased pressure on the local resources such as water and sewage systems; development of new infrastructures in form of hotels; vacation cottages; etc in the local communities of those areas. Some of these are a benefit while others are a cost to the local community.

Unlike some places where the brochures of the physical attractions of some destinations are sometimes exaggerated, Fanø Island's conceptually physical appearance is as much as what is portrayed in its tourist brochures. According to the conceptual research findings of this study, it was found that the nature attractions such as birds, flora, beaches which are portrayed in the Fanø tourism brochure are present However, just like in other tourists' destinations, these tourism attractions have caused a great change in the topography of Fanø in terms of infrastructure

developments especially at and around prime locations such as the beach area, restriction to entrance to some areas, etc. On the other hand, although most of these changes have greatly contributed to its development in terms of for instance creation of more jobs, increased infrastructure developments, etc, they have also lead to alternative negative impacts in the area. These attractions have increased pressure on the use of land in the area were by due to the high vacation houses concentration in mostly few areas, this has given rise to some problems such as sewage and contamination of the ground by the waste from various households.

And because of negative impacts like these, that is why it became imperative to protect, conserve and sustain the Wadden Sea Region. And in this effort, a co-operation referred to as the Wadden Sea Co-operation which has been in place for over 25 years was formed between Germany, Denmark and the Netherlands under which Fanø Island falls.

Under this co-operation, three aspects of protection and management are emphasized namely:

- The ecological integrity of Wadden Sea can only be maintained and restored by the conservation and the wise use of the area;
- The Wadden Sea, including the adjacent land and sea territory must be protected and managed in an integrated way in order to maintain and restore its integrity by applying integrated planning, by applying conservation measures and by integrated management; the principle of sustainable utilization should therefore become an integrated part of all relevant sector activities;
- The Wadden Sea is a shared region which must be protected and managed on the basis of common principles and objectives cutting across differences in legal and administrative systems; these common principles and objectives of sustainable utilization can be applied to (shared) coastal systems for an integrated coastal zone management.

And in order to achieve these protection and management aspects, different strategies such as zoning of different areas, encouraging ecotourism and applying of carrying capacity measurements, etc have been applied in different areas for instance in Lower Saxony national park in the Germany Wadden Sea area, In Belize city in Central America, Lake Nakuru national park in Kenya, etc . Hence the answer to our research question. Hence, in relation to the objective of this research study, we undertake a research review to determine how the environment of the Wadden Sea Region and precisely Fanø Island is sustained as compared to other tourists' destinations. And to be able to under this review, we use the research question below as the steering.

How can (is) the tourism environment be sustained in general as well as in the chosen case area of this study (Fanø)?

According to the research review findings, in an effort to sustain the environment, it was noted at the 6th Trilateral Governmental Conference on the Protection of the Wadden Sea in 1991, at which the three governments took stock of the cooperation between the three countries almost 10 years after the adoption of the Joint Declaration, that there were indeed a number of major similarities in protection measures in terms of objectives of protection and in terms of management based on a zoning system. However, it was also noted that there also existed a number of differences between the protection regimes of which the major ones are:

- Differences with respect to implementing the concept of the development of natural processes including the weighing of interests;
- Differences with respect to the delimitation of the Wadden Sea, both landward and seaward;
- Differences with respect to the regulation of human activities and management of the area (CWSS 1992a Ministerial Declaration).

Beyond these, there are also the existing differences in the legal and administrative systems, as indicated above, e.g. with respect to responsibilities in the field of nature conservation. The German federal states are responsible for nature conservation according to the Constitution within the federal framework act, whereas the federal government is responsible for foreign relations. In Denmark and the Netherlands, both is the responsibility of the central government. Such differences explain, to a certain extent the differences in protection regimes.

However, as regards to those management bottlenecks, it was agreed by the three countries to engage in collaborative action through deliberations, co-ordinations of research work and findings, etc. In order to further narrow the differences in legal and administrative systems, seven common management principles were adopted for the Wadden Sea among which include the precautionary principle which advocates for taking action to avoid activities which are assumed to have significant damaging impact on the environment even where there is no sufficient scientific evidence to prove a causal link between activities and their impact and the principle of careful decision making among others which advocate for making decisions on the basis of the best available information (CWSS 1992a Ministerial Declaration, CWSS 1992b).

Besides the legal and administrative management strategies, other measures namely carrying capacity determination are utilized. However, for the case of Fanø, the carrying capacity determination strategy is used as a process or guideline since there is no specific limit which is as yet put in place for the utilization of specific areas in the area. This validates Gezt (1982) and Butler(1996)' s argument that carrying capacity alone denoted by a single number as argued by various scholars is not sufficient to be the basis upon which a specific area is utilized. However to sustain various areas in Fanø, the municipality engages in monitoring and evaluation of various activities which are undertaken in various areas. However, even with these monitoring programs, Fanø still faces some problems mainly sewage problem as it was argued before, which problem pollutes the environment as well as the ground causing growth of new species which are pushing out the old species.

Tourists' mobilities in some areas in Fanø are limited or delimited. Since mobilties are produced via complex assemblages, such as road networks, inaccessible areas, etc some areas in Fanø are closed off while others have no specific pathways yet most tourist destinations in the area are far away from the main road where by tourists have to commute through rough sandy pathways to the specific areas, yet most of these tourists are senior citizens who can not walk too long distances. And since most tourists come from as far as: Copenhagen, other cities of Denmark, Germany, England, etc, some of them travel by plane and they carry with them baggage, imaginative maps, etc which travels are always tiresome to the part of the tourists, and contributing to the global warming by pollution from the airplane.

Since most people to the Island come by a ferry from Esbjerg, this also has some bottlenecks such as the continuous rise of the sand levels in the water; this causes some slow movements of the ferry and calls for continuous monitoring of the sand levels in the sea by the management of this means of transport. Various discussions have been undertaken such as on the proposal of constructing a highway from the mainland to Fanø just like from Skaerbaek to Rømø Island, so as to provide alternative means of transport to Fanø, which proposal has been refused (especially also by the environmentalists) because various stakeholders argue that this will create more traffic and pressure to Fanø, which will result into the degradation of its urban structure and natural environment.

Since the main economic activity in Fanø is tourism, more environmental problems are yet to be experienced due to the numerous developments that are being undertaken so as to satisfy the

tourists. Urry argues that development of environmental consequences is still to be expected in various areas such as in the Mediterranean because of the numerous Islands there such as Malta, Crete, Rhodes, etc which have become popular tourist destinations for Europeans with higher dependency on tourism just like in Fanø which is experiencing a lot of construction developments especially of vacation houses.

And as such, tourism should be a bridge between economic development and the environmental sustainability as recognised by for instance the Tourism and Environmental Forum in Scotland[8] which advocated for integration in the tourism sustainability. In Scotland, such integration in the tourism sustainability was practiced by for instance establishing a scheme in 1998 by the Scottish tourism department for rewarding tourist businesses for their environmental accomplishments through a scheme referred to as the "Green Tourism Business Scheme" (GTBS) (Green Tourism 2001)

Among the results of this scheme have been reductions of energy costs, improved waste management, increased recycling, and cleaner, safer, and improved landscape. For example, Ashdene House (a small hotel on the outskirts of Edinburgh). Such schemes could contribute to the already existing measures in playing a role in integrating the local community in undertaking measures which can sustain the environment in Fanø in the future.

7.2. Recommendations

Basing on the research findings of this report, tourism is the main source of economic development on Fanø Island as of today. Therefore, an effort must be made to plan well, protect, sustain, and conserve the products upon which this venture operates. In other words, from an environmental point of view, the proposal of transforming the Danish Wadden Sea side, Fanø included, into a national park is likely to: open and increase pressure on land use in Fanø Island due to potential possibilities of aggressive new developments, increase traffic congestion and pollution as a result of increased inflows of vehicles on the Island, etc. Some of those developments might not only have greater impacts to the environment, but also on the inhabitants and other components of Fanø Island such as the local members of society, tourists, wild life, etc.

Since development is inevitable in this area just like in any other areas which are pursuing objectives of economic growth and development, then, measures should be undertaken to develop more attractions for all ages so as to improve on this venture (tourism) in this area by for instance:

[8] Maclellan R.Tourism and the Natural Enviroment Paper 5 in series Scottish Environment Audits May 2001

marking pathways to various areas such as the bird sites, seal areas, etc; introducing rock climbing and skateboard games; festivals, etc in the area. However, also measures should be put in place which can minimise the likely impacts from the developments by for instance: encouraging more collaborative action and co-ordinating research findings, encouraging eco-tourism, practicing tourism sustainability through employing eco-tourism and carrying capacity measurements which do not only focus on the economic benefits but also on the sustainability of the environment and its natural aspects upon which this trade exists.

Also Fanø Municipality could establish a scheme such as the Green Tourism Business Scheme in Scotland[9] which is described under the conclusion and discussion section of this chapter. This scheme could reward businesses for their environmental accomplishments which in the case of Scotland is argued to result in for instance: the reductions of energy costs, improved waste management, increased recycling and cleaner, safer, and improved landscape such as was the case of Ashdene House (a small hotel on the outskirts of Edinburgh). Such schemes could contribute to the already existing measures in playing a role in integrating the local community in undertaking measures which can sustain the environment in Fanø Island in the future.

We also second the environmentalists arguments against the proposal of establishing a high way which could connects Esbjerg to Fanø Island since this is likely to increase the inflow of: individuals, vehicles, etc in this area which is likely to cause devastation to the environment just like what happened in the case of Sanibel Island in the west coast of Florida in USA. The ferry from Esbjerg to Fanø Island can still accommodate the number of travellers from Esbjerg to Fanø Island and as such the need for an alternative means of transport is not yet feasible. The only crucial issue here is to maintain monitoring the water levels in which the ferry sails since the sand levels keeps rising in these waters.

However, if there ever come a point where there is greater necessity for alternative means of transport to Fanø Island, and that there is enormous disagreement and failure of consensus building between various stakeholders about the proposal of an alternative means of transport, a referendum could be carried out just as it was carried out in Sanibel Island.

Also since there is a major sewage problem, mainly caused due to the large concentration of business and vocational houses in one area of the Island, this could be solved through availing more

[9] Look to sub chapter 4 p. 35

finance for collecting and disposing off the waste or a bio-gas plant could be setup in this area so as to process gas from this waste.

Basing on the research findings, at this point in time, the concept of carrying capacity should not be much emphasized because most areas in Fanø Island can still tolerate large numbers of people; however eco-tourism activities such as:

- Development of observation viewpoints in identified locations such as bird viewing areas where various individuals can view the birds without distracting them just like in lower Saxony national park should be undertaken;
- Development of nature trails for hiking and to connect to various proposed observation points, caves and picnic areas just like in Lower Saxony national park, Lake Nakuru National park, etc;
- Training of staff of ecotourism matters just like in many sectors in Belize city, , among other things;
- Development of access roads to various areas, etc.

Since the basis of tourism in Fanø is built on its wild and nature heritage, this heritage could be conserved and improved on by restricting access to very sensitive areas and construction of more environmental friendly recreations such as roads for cyclists, rock climbing, tourism cultural village, festivals, etc which could attract people of all ages. Animals such as dogs should be restricted in specific areas such as bird nesting areas because they not only chase and try to eat them (the birds) but also distract them.

Also more research should be carried out to: determine tourists' interests and expectations; assess local perceptions and level understanding and capacity regarding eco-tourism developments, etc which findings can play a large role in: implementing processes, management problems and monitoring programs. This Research should not only be done about the areas tourists visit but also on the various individuals involved in this tourism venture such as the hotel owners, summer and vacation house owners, the tourists themselves, etc so as to establish their knowledge about the impacts of their various: behaviours, actions and activities to the environment, upon which more information will be developed on how they can be informed and how they can contribute to the sustaining of the environment by engaging and promoting in environmentally friendly activities.

The co-operation between the central government and the decentralized administration should be increased so as to enable better co-ordination of infrastructure planning in the Wadden Sea Region, in accordance with the infrastructure chapter of the Wadden Sea Federation (WSF) Final Report. Where controversial policies are to be undertaken about not only environmental issues, but also other issues in Fanø Island, working groups comprising of for instance: government officials, independent experts about specific issues, representatives of various interest groups such as the hoteliers, vacation cottages and house owners (this in relation with the subject of this report), etc in order to reduce emotionally charged public debates and attain consensus acceptable to the society even before formal decisions are taken by the government institutions. One example for a successful integration of very different interest groups of people is the 25-year strategic plan for the Great Barrier Reef in Australia (Cansfield-Smith: 1998), which has been accepted by all stakeholders as a framework for long-term planning, management, exploitation, education and research in the area of the Great Barrier Reef.

Most of these recommendations can be generalised. Thus, meaning that most of them can be applicable in other areas of the Wadden Sea Region and in other tourists' destinations in other parts of the world. However, their application in other different areas will be determined and influenced by: the laws and policies of planning in those areas (because laws and planning policies differ from country to country); financial ability of those areas; and how they are carried out; etc. For instance, in areas where public participation in not practiced and that planning is mainly centralised, it will be difficult to involve all parties which are likely to be impacted by the policies which different governments institutions are planning to introduce. In the long run, this may cause failure in the implementation of these policies in form of: demonstrations, destruction of structures established by the different governments, etc if policies are forced in areas against the residents´ consent.
Also, in cases where there is lack of sufficient funds in government coffers to establish schemes such as the Green Tourism Business Scheme in Scotland[10], it would be difficult to establish such schemes. However, governments could engage in availing free training of various stakeholders the significance of eco-tourism and encourage them to promote it through for instance using materials which are environmentally friendly when constructing buildings. This can also be enforced by law. Therefore, in order to overcome most of those implementation bottlenecks, there should be

[10] Look to sub chapter 4 p. 35

integration of activities between: the central governments; municipal, regional and county level; and the various stakeholders about any planning policies and developments which are to be undertaken by the governing bodies responsible of planning and management in any area.

REFERENCES

- Bao. (1990): *Ecotourism: The potentials and the pitfalls. World Wide Fund for Nature*, Washington DC
- Bates and Wacker. (1996): *Tourism and the European Union* .A Particle guide Brussels. Belgium
- Buhalis, D and Diamantis, D. (2001): *Tourism development and sustainability in the Greek archipelagos*
- Butler, R. (1993): *Tourism: an evolutionary perspective*.
- Caneday and Duston. (1992): *Sustainable Tourism Development in South Central Oklahoma*: Theory, case study and model. Oklahoma State University, Oklahoma City, Oklahoma
- Cansfield-Smith, T (1998): *The 25 year strategic plan for the Great Barrier Reef World Heritage Area*: a model for Strategic planning in the Wadden Sea Area. Senckenbergiana maritime
- Cater and Goodall. (1992) McLaren. (1997) Rothman. (1998) Honey. (1999): *Must tourism destroy its resource base*
- Coastal Protection and Sea Level Rise. (2001): *Final Report of the Trilateral Working Group on Coastal Protection and Sea Level Rise Common Wadden Sea Secretariat*. 02. May.2007 http://www.waddensea-secretariat.org/news/documents/cpsl/CPSL-Report.pdf.
- Cohen, E. (1972): Toward a Sociology of International Tourism. Social Research
- Coetzee, P.J van V (2005), *A Reading of Power Relations in the Transformation of Urban Planning in the Municipalities of Greater Pretoria Region (Now Tshwane)* :(1992-2002). A PhD Thesis Presented to the University of Pretoria, South Africa. 28th. May 2007 on upetd.up.ac.za/thesis/available/ etd-10072005-140536/unrestricted/00front.pdf
- *Contaminants in Bird Eggs in the Wadden Sea Spatial and Temporal Trends*. (1991:2000): 07.May.2007:http://www.waddensea-secretariat.org/news/documents/bird-eggs2001/3-Report2.pdf.
- Cui, F. J. (1995): *Tourist environment bearing capacity.* Economic Geography
- Defining, measuring and evaluating carrying capacity in European tourism destinations. University of the Aegean. Department of department studies. (2002) Athens. 24th. April.2007: http://ec.europa.eu/environment/iczm/pdf/tcca_en.pdf.
- Eagles and McCool. (2002): Tourism *in National parks and protected areas*

- Eco- tourism potential and development within Lake Nakuru National park and its catchments. (2004):17th .Feburary 2007: www.ramsar.org/about/about_sustainabletourism_lakenakuru.pdf.
- Fanø in the early time: www.fanoeturistbureau.dk/picture.asp?show=rebekka.jpg&subid=11&menuid=2&medid=22&la=gb: 22nd. April.2007
- Fanø Municipality*: Strategy for Municipality plan in Fanø Island. (2004) and the Municipality vision. (2003)*
- Fanø tourist office home page: http://www.fanoeturistbureau.dk/fanoe.asp?menuid=2&medid=22&subid=11&la=gb. Date assessed 22nd. April.2007
- Gerald Wright, R: (1996): *National Park and Protection Areas (Their role in environmental protection)*: Cambridge, USA
- Gunn, Clare. (2002): *Tourism planning, Basics Concepts and Cases*. Fourth edition, New York
- Koester, V. (1989): *The Ramsar Convention. On the Conservation of wetlands*. A legal analysis of the adoption and implementation of the Convention in Denmark. 1989
- Kulturarven: The heritage of the Wadden Sea (2007): http://www.kulturarv.dk/kulturarv/vadehavet/eng/conference2006/results.pdf. Date assessed 29th. April.2007
- Lassen, Claus: PhD: (Den Mobiliserede Vidensarbejder; en analyse af intrenational arbejdsrejsers sociolgi) Aalborg University.
- Lindberg and McCool. (1998): *A critique of environmental carrying capacity as a means of managing the effects of tourism development*. *Environmental Conservation*
- Lower Saxony National park in German Wadden Sea: (http://www.nationalpark-wattenmeer.niedersachsen.de/master/C23766749_N23767434_L20_D0_I5912119.html. Date assessed. 22nd. May. 2007
- McCool and Moisey. (2002): *Tourism, Recreation and Sustainability* Linking Culture and the Environment.
- Mclntyre. (1993): *Sustainable Tourism development: Guide for local planners.* Madrid, Spain. World Tourism Organisation.
- National park in Denmark home page: http://www.sns.dk/nationalparker/english.htm. Date assessed 15th. May. 2007

- Prognos AG. Sector-specific analysis and perspectives fro the Wadden Sea Region, Bremen, 2004.
- Project Tourism. (1995): *Environmental impacts of Tourism*
- The Wadden Sea co- operation (2002):

  http://www.waddensea-secretariat.org/trilat/brochure/1waddensea.html. Date assessed: 29th. March. 2007

  http://www.waddensea-secretariat.org/trilat/brochure/2impact.html. Date assessed: 29th. March. 2007

  http://www.waddensea-secretariat.org/trilat/brochure/3protection.html. Date assessed: 24th. March. 2007

  http://www.waddensea-secretariat.org/trilat/brochure/4trilateral.html. Date assessed: 24th. March. 2007

  http://www.waddensea-secretariat.org/news/documents/bird-eggs2001/3-Report2.pdf. Date assessed: 07th.May.2007

- Sheller, Mimi and Urry, Johon (2004): *Tourism Mobilities*: Places to play, places in play. London
- Stauth and Turner. (1988): *Nostalgia, postmodernism and the critique of mass culture; theory, culture and society*
- Stephen. F, Macool and Moisey. R, Neil (2002): *Tourism, Recreation and Sustainability*. Linking Culture and the Environment: School of forestry, University of Montana, Missoula. USA
- Smith, Stephen: (1989): *Tourism Analysis*, New York.
- Swarbrooke J: (1999): *Sustainable Tourism Management*, Wallingford: CABI
- Urry, John (2003): *Global complexity*: First edition 2003, Cambridge
- Urry, John.(2002): *The Tourist gaze*: Second edition 2002, London
- Urry, John. (1996): *Consuming place,* London
- Zwiep, K. (1990): *The Wadden Sea: A yardstick for a Clean North Sea in Freestone*, D. and I.J.lstra, T. (1990): *The North Sea: perspectives on regional environmental cooperation*: special issue of the International journal of estuarine and coastal law. London.
- Wadden Sea and Marshland- world class nature. (2005), Skov og Naturstyrelsen. Gram. Denmark.
- Wikipedia: (2007) home page:

  Danish Wadden Sea: http://en.wikipedia.org/wiki/Danish_Wadden_Sea_Islands. Date assessed: 14th. February.2007.

Tourism: http://en.wikipedia.org/wiki/Tourism. Date accessed: 28th February. 2007.

- World Commission on Environment and Development. (1987): *Our Common Future.* Oxford University Press, Oxford
- World Tourism Organization. (2002): *Year book pf tourism statistics 2002*, Madrid
- World Travel and Tourism council. (1995): *Agenda 21 for the Travel and Tourism Venture: Towards Environmentally Sustainable Development. WTTC,* London
- Yin, R. K. (2003): *Case Study Research – Design and Methods* Third Edition, Vol 5 Applied Social Research Methods Series Sage Publications, London
- Yin, R. K. (1989): *Case Study Research- Design and Methods* First Edition , London

APPENDIX

APPENDIX A: Interview with Marco Brodde

This is an interview with Marco Brodde an employment in Fiskeri og søfartmusset, Esbjerg and tourist office in Fanø on the 16th of April at 10:00.

Q1: What is the brief history of the Wadden Sea?

A: Between the 19th-20th centuries before it was turned into this heritage area, this area was a shipping area and the beginning between 200-300 years ago, with little fishing and farming on the Island. Most Fishing activities were taking place in Esbjerg. And then as the ships became bigger and it was possible to gather more money, it was possible to travel to around the world. In the beginning to German, England, Holland, Norway, etc, and in the 20th century around the world. In the 70s, as tourism become more modern, these places started to attract a lot of people.
During that period, Fanø was the second biggest shipping fleet after Copenhagen.

Later the fleet collapsed because of the new harbour development in Esbjerg. So the development in the trading and transport systems, meant that the all the traffic went to the new developed harbour in Esbjerg which is only 120years old where at that time there was only a little farming. Because of the railway, it was possible to transport goods over land, and therefore harbour areas on the Island lost there importance in trading. The last sailing ship was made in 1910 in Fanø. The rail also meant that the tourist form the east coast like Copenhagen were able to travel very easily. The technical development meant development of Esbjerg and collapse of Fanø

Q2: Give a brief history of Fanø in relation to the Wadden Sea National park.

A: The discussions of the nature of the Wadden Sea first pop- up in the beginning of the 1970s. Like any other environmental discussions.

The world in the beginning of the 19th century in England and France, Denmark way pushed in this war, and this impacted a lot of the economic situation pf Fanø, but after some years, the situation improved in shipping.

First tourist came about 100yrs ago, mostly Germans, and guest citizens from Copenhagen and other bigger cities of Denmark.
Golf club in Fanø is little more than 100yrs old and founded by Germany tourists.
They started coming in around the 1880s, they came for the possibility to swim in the sea. This was so because people like in Copenhagen thought that the people in Fanø were very exotic, that time had at a time stood still for them for some years. They were not modern at all at that time.

Traditionally people were not allowed to go in the water to swim just after 3days and then just for 15min and get out then, and then had to get out then. Locals thought the sea was dangerous.

In the beginning of the 20th century, there was emergence of golf courses, tennis clubs, etc
1920s there was a car race on the beach and this was very popular at the time until a boy died of an accident, the incident nearly repeated itself when one investor tried to revive the races. A journalist nearly died.

Q3: How is this region managed by the three countries?

A: Its three year level management cooperation, the programmed cooperation is 30years cooperation, a three governmental co-op, every 4 years; they meet and try to sum up what has been done in the last 4yrs, and what to do in the next 4yrs
They always come up with individual polices then they discuss them and come to a consensus. For instance how the seals can be managed, how bird areas should be protect. But despite this, there are always individual differences in for instance the desired methods to be used by individual nations. e.g. in Germany and Denmark, if there is a seal of the beach, they would leave it there and watch it, an if it is ill away from its parents, they short it because they will say the population is big enough, and killing one will not cause any harm. While in Holland they try to bring back in the seals, and feed them. Though these companies have a common agreement of what to do. However, the common goal is to protect nature's heritages and their habitants by all the 3 countries

The Wadden Sea Region co-operation is very important; because this is was the lower political levels of an area participation in the discourses and deliberation of management of a specific resource.
There is the European Union which also plays an enormous role for the Wadden Sea too.

Q4: Briefly, how do you characterise the economic, social and environment situation of Fanø before it became an international tourist destination if you may please?

A: It was fishing, low economic activities, low small ship fishing. Then the harbour was rebuilt at Esbjerg harbour and most of fishing activities with new large ships were transferred to this harbour.

Q5: Is tourism one of the significant elements of development in this area?

A: Definitely, it's the major economic activity in Fanø. Every business is not in one way nor did the other link to tourism. Today no fishery at all on the Island. Fanø other economic activities like carpentry.

Q6: How do you characterise its current economic, social and environmental situation?

A: It has changed due to tourism

Q7: What are the Environmental impacts of tourists to this area?

A: Most especially sewage problems due to the large number of toilets by the motels. But there economic developments such as a school, a lot of vocational houses, etc. But most of the houses are built in wetlands, and as a result they are drying up. You can see on the south side of the main road, a lot of vocational houses, while on the eastside nothing is allowed. The place for sewage collect is large but is not spread all over the Island. Everything from the vocational houses toilets ran through the ground pollute in one way, and in another way enriching it. This has lead to growth of new wild plant species which are displacing formally ancient wild species which can not be tolerated by other species. The real problem is that the effects of these developments take along time to be noticed. It

was argued that more work is to be done on this issue; it might end up forcing house prices to rise. Dogs are a problem. They don't stay in line during tours.

Q8: How are the local resident of this area integrated into this tourism market so that they benefit from it as well as participate in conserving it?

A: They have carried out a lot of discussions, and also agenda 95, I don not know more about that.

Q9: What are the peak seasons for tourists in Fanø and how long are these seasons?

A: The first week in the May to the last of September is a high season in the Fanø, and a little bit around charismas and New Year holidays.

Q10: Where do most of the tourists to these destinations come from?

A: From Germany 55% specific area from north Germany, 35% from Denmark specific area from Copenhagen and south of Jutland, and the rested from Holland, and very few Londoners.

Q11: What means of transport do most of the tourists use when coming here?

A: The main transport is a car, but all cars should be taking the faro from Esbjerg to Fanø Island it is 4 times on the hour.

Q12: What kinds of tourists mostly frequent this area? Are they pensioners, working class people running away from the pressures of their work places, students, researchers, etc?

A: Families of senior citizens with their kids, but very few teens.

Q13: What are the most visited places in this area and why?

A: Most of the places on the Fanø like the beach and city centre and especially the bird viewing areas.

Q14: Are the distances between various tourists sights in walking distances, or tourists have to use different means of transport if they are to visit different locations?

A: Yes, there some distances but since the no roads in most of the visiting areas, people have to commute to various areas.

Q15: What is the approximate number of tourist that visits this area?

A: It is about 3o person per tour with one guide, some times these numbers changes according to the seasons.

Q16: Can the Tourist market in Fanø survive without the international tourist by depending on only the local tourists?

A: No it can't

Q17: What are the impacts of the tourists on the local water systems and sewage system?

A: The pressure is too much and is polluting the environment.

Q18: What happens to the tourism market here during the non peak seasons?

A: Some people do visit in this period but in very few numbers, and the enable some businesses such as hotels to survive the non peak seasons, the different stakeholders came up with a proposal for individual hotels to be open on a specify day so as to avoid even the competition.

Q19: Are there traffic problems especially during peak seasons?

A: Not necessarily.

Q20: What is the most protected area in Fanø?

A: The Sønderho area in the south of Fanø, Nordbystrand (Bird life area), Fanø plantation area, only cars can be used in this area.

Q21: What determines the quality of tourist's experiences in Fanø?

A: The comments that they give. For instance some of them might admit that they never new that a particular aspect such has global warming could affect the habitants and movement of birds.
Some of them request that they come back alone after having experienced a guided tour.

Q22: What improvements would you suggest to improve the tourists market in Fanø in the future?

A: May be tarmac, or well made cyclist paths

Q23: What measures are put in place to solve these problems?

A: Constant monitoring of sites and research about how to protect them.

Q24: What are the carrying capacities of this area from environmental point of view?

A: There are no established numbers.

Q25: Are they any contemporary proposals for the future development of the Wadden Sea in relation to sustaining its environment?

A: The is the Agenda 21, check out the Net Forum Also.
Discussions are being carried out to either leave this as a nature heritage area or turn it into a national park. To also educate people about the trilateral cooperation, and it is all about.

And may be they develop in activities which can attract various groups of people like the teens/youth.

APPENDIX B: Interview with Dr. Folkert de Jong

This is an interview by mail with Folkerts de Jong Deputy Secretary from the Wadden Sea co-operation in Germany on the 22nd of March at 14:00.

The Wadden Sea is not a World Heritage Park. It is an area under national protection regimes (In Germany National Parks, in Denmark by Statutory Order). The three Wadden Sea countries Netherlands, Denmark and Germany have been cooperating at the political level since 1978 to coordinate their national nature protection management programmes.
Currently is investigated if the area can be designated as a World Heritage Site (Denmark has indicated that it will not join this undertaking)
We would like to ask about various Environmental aspects concerning this park. This are:

Q1: What influenced the three countries namely: Germany, Netherlands and Denmark to undertake a project to jointly develop this area into what it is today?

A: See attached article "The protection of the WS"

Q2: What kinds of developments have been influenced in this area as a result of its tourism market?

A: See QSR pp. 39-48
http://www.waddensea-secretariat.org/QSR/chapters/QSR-02.1-2.5-human-activities.pdf

Q3: What kind of tourists? Environment impacts area experienced in this area?

A: See QSR pp.39-48 and the: http://www.waddensea-secretariat.org/QSR/chapters/QSR-02.1-2.5-human-activities.pdf

Q4: What kinds of measures have been undertaken by the management of this area to sustain the environment in this area as regards to its use as a tourist's destination?

A: See Wadden Sea Plan (WSP) and the: http://www.waddensea-secretariat.org/management/Plan.html

Q5: How do small tourists businesses such as hotels, restaurants, etc in this area contribute to the protection of the environmental in this area?

A: I do not know

Q6: Is there a Master plan for future development of this area, if yes, what is it, or how does it look like?

A: See WSP and the: http://www.waddensea-secretariat.org/management/Plan.html, see also WSF "Breaking the Ice" section 5.5 and the. http://www.waddensea-forum.org/Archive/WSFnewArchive_reports.htm

Q7: What kind of development policies (such as concerning housing development in this area) are applied in this area since the area is shared between three countries with different Tourists cottage development policies?

A: Policies are national and see also WSF"Breaking the Ice" section 5.5.

I will send you some papers which talk about the protection of Wadden Sea. This is as follows:

The protection of the Wadden Sea in an international perspective, Planning, protection and management of the Wadden Sea.

Jens A. Enemark, secretary, Common Wadden Sea Secretariat, Virchowstrasse 1, D 2940 Wilhelmshaven.

1. Introduction

Nature conservation in the Dutch-German-Danish Wadden Sea has a long tradition. In the beginning of this century, smaller uninhabited Islands were protected for the purpose of, in particular, breeding bird colonies of coastal birds. Later, this was extended to salt marshes and, on a limited scale, to the sea-territory of the Wadden Sea itself (Wolff 1990, Rudfeld 1990a). Some 25 years ago, it became evident, in conjunction with an increasing awareness of the areas outstanding national and international importance, that the traditional terrestrial and species conservation was inadequate to preserve the Wadden Sea ecosystem as such. Large scale embankments, made possible by advances in technical possibilities, rapid increase in tourism in the area, harbor and industrial developments and pollution from adjacent areas endangered, or, in some cases, turned over the more or less existing balance of traditional use of the area and the conservation of the system (Wolff 1976; see also Reineking chapter... page...).

About 25 years ago, the initiatives to protect the Wadden Sea as an ecological entity commenced by scientists, nature conservation interest groups and policy makers, e.g. by establishing a Wadden Sea Working Group of several Dutch scientists in collaboration with nature conservation organizations in 1965. Since 1970 Danish and German scientists joined the common efforts which resulted in the 80s in both, the establishment of a national based Wadden Sea conservation policy, encompassing

extensive nature protection schemes, and the establishment of a trilateral Dutch-German-Danish cooperation on the protection of the Wadden Sea.

The protection of the Wadden Sea requires the application of a wide scale of legal instruments and an integrated management to ensure its conservation and wise use. This chapter will focus in particular on two aspects of the protection of the Wadden Sea:

- The protection on the national level of the three states, so as to examine differences in approaches identifying issues of consideration with respect to the cooperation on the international level, and
- The cooperation between the three Wadden Sea states with the goal of examining the approach and systems with regard to the protection of a shared coastal system.

Whilst both levels are analyzed separately, it should be stressed that the national and the trilateral level are closely interrelated, being an example of coastal management of a marine ecosystem and its conservation and wise use, based on many years of experience in attempting to resolve issues that such coastal areas are confronted with.

2. Trilateral cooperation: establishing political cooperation

In the 70s, it was recognized by the governments of the three adjacent states that the Wadden Sea as such needed to be protected, and in order to protect the Wadden Sea as an ecological entity, arrangements in the field of nature protection policy and management between the three states were necessary. A problem related to such common arrangements between the states is the fact that there are differences between the countries in terms of legal and administrative systems (Zwiep 1990).

In order to overcome such differences, a draft Convention on the Conservation of the Wadden Sea Region was prepared by the International Union for Conservation of Nature and Natural Resources (IUCN) in 1974 and submitted to the governments of the three Wadden Sea states (Wolff 1975). The proposed convention was a framework for the protection of the Wadden Sea as a whole, establishing an arrangement for intergovernmental cooperation. It was, however, not accepted by the concerned states in essence, it can be assumed, at the time, because of the lack of legal

protection measures on the national level in conjunction with the binding character of the proposed convention according to international law. Judged by modern standards of environmental protection, the convention was by no means a "chocking" proposal, but it introduced some new elements in conservation like the landward buffer-zone concept, and the introduction of a joint commission for the management of the area. Developing a model for the protection of the Wadden Sea , based on extensive research and examination of the legal and administrative possibilities, was necessary (Mörzer Bruyns 1983).

Therefore, both the national and the trilateral line of protection and cooperation continued. The Wadden Sea was protected according to a series of national initiatives during the 80s starting with the Wadden Sea Memorandum in The Netherlands in 1980 and later the establishment of a Nature Reserve in the Danish part in 1982, and National Parks in the German part from 1985 on. The whole Wadden Sea from Esbjerg in Denmark in the north to Den Helder in the Netherlands in the west is now under protection.

Parallel hereto talks between the three governments were initiated resulting in the first Trilateral Governmental Conference on the Protection of the Wadden Sea in 1978. At the Third Governmental Conference in Copenhagen in 1982, the three governments agreed to a Joint Declaration on the Protection of the Wadden Sea. According to the Joint Declaration, the governments declared their intention to consult each other in order to coordinate their activities and measures to implement a number of international legal instruments with regard to the comprehensive protection of the Wadden Sea region as a whole. The international legal instruments mentioned are the Ramsar Convention on Wetlands, the Bonn Convention on conservation of migratory species, the Bern Convention of conservation of European wildlife and natural habitats, and the relevant EC Directives in particular the EC- Bird Directive (Zwiep 1990).

The Joint Declaration resolved a dilemma. It is in essence a declaration of intent, stating a political commitment to work towards a common goal, but it includes a number of legally binding international instruments. It can be contested that it is the intention of the parties that counts rather than the legal character of the instrument. (v.d. Mensbrugghe: 1990).

The Joint Declaration served as a catalyst. The cooperation between the Wadden Sea countries was extended, and, in order to further structure collaboration, a common secretariat was established. The Wadden Sea was designated as a Wetland of International Importance (Ramsar Site) and larger parts as Special Protection Areas (SPA) according to the EC-Bird Directive. In addition, the German and the Dutch part have been declared a Man and Biosphere area (MAB) of the UNESCO.

Table 1. Status of International Designations. Source: CWSS, 1991c (modified).

	Ramsar	SPA	MAB
Denmark	1987	1983	-
Schleswig-Holstein	1991	-	1990
Hamburg	1991	1983[1]	1992
Niedersachsen	1978	1982	1992
Netherlands	1984	1991	1987

[1] Only the Islands Neuwerk and Scharhörn

(Insert map of the Wadden Sea and the protection regimes)

3. National Wadden Sea policy: conservation and integration

The protection measures implemented in the Wadden Sea area in the 80s, according to national legislation as indicated above, share the common objective that they aim at conserving and protecting the Wadden Sea as a nature area of international importance. This objective has been pursued according to basically two "models" of protection, namely the Dutch model of planning and conservation and the German model of establishing national parks in the Wadden Sea. The Danish model takes a somewhat intermediate position between the two. The measures entailed in both "models" aim at resolving basically common problems. It is therefore worthwhile considering these models in order to examine their resolving capabilities for some of the most important common issues.

3.1 National parks as an instrument of nature protection

The German coastal states of Schleswig-Holstein, Lower Saxony and Hamburg have designated their parts of the Wadden Sea as national parks in 1985, 1986 and 1990 respectively. The federal states are responsible for nature conservation in the framework of the Federal Nature Conservation Act, in which provisions for nature protected areas and national parks are laid down.

Whilst there are some differences between the national parks, e.g. in terms of delimitation of the area, regulation of activities and utilization, they share some common basic features of which the most important ones are:

a. the national parks are divided into zones (two to three) in which different activities and exploitation are allowed; the ecologically most important areas are encompassed in zone 1, the core zones, extending in the different parks from 30 to 50% of the territory, where admittance is prohibited and planned to declare them as non-use zones;
b. national park authorities have been established in the three parks which are responsible for the implementation of the provisions of the National Park Orders and Acts, in order to ensure a unified protection and management regime within the boundaries of the Wadden Sea national parks; the jurisdiction of regional and local authorities in the framework of nature conservation has been limited or ended in the national parks (CWSS 1991a; Peet 1991, Burbridge 1991).

Since the establishment of the national parks progress has been made with respect to improving the management of the national parks, e.g. salt marshes and the resolving of some economic activities

by implementing the zoning system e.g. for mussel and cockle fishery, which have a negative impact on the Wadden Sea. The approach ensures, to a large extent, that nature conservation interests in the national parks are pursued, and a unified management according to the guidelines of the national park authorities will be implemented (Andresen 1992).

There are however, a number of developments and activities, which have an impact on the Wadden Sea that cannot, or can only indirectly, be solved by the establishment of national parks. This concerns the complex ecological, management and economic situation in the coastal area. Firstly, many of the developments which have a significant negative impact on the Wadden Sea ecosystem originate from outside the boundaries of the parks. This is, in particular true of pollution, shipping in the North Sea and recreation, only to mention some of the most important ones. Such developments can only be controlled by taking measures in adjacent areas of the Wadden Sea national parks.

Secondly, the national parks cannot operate effectively in coastal areas unless they form a part of a broader regional planning system. The national parks must be part of the physical planning schemes of the national, regional and local levels. This also applies to developments within the parks. Whereas the national park authorities can pursue a wide range of conservation interests, as regulated by the national park orders and acts, other federal and state authorities have basically maintained their responsibilities. This requires a well developed sectoral planning system and close cooperation between the sectoral agencies to promote the objectives of the national park (Burbridge 1991; Andresen 1992).

In summary, the policies and management of the national parks should be seen in the framework of a broader coastal system, and an integration of the planning and the activities of sector agencies.

3.2 Dutch - Danish Wadden Sea policy: integrated planning

The outset of the Dutch Wadden Sea policy differs in some essential features from the German approach. The key governmental decision on the protection of the Wadden Sea, the Wadden Sea Memorandum, adopted in 1980 and amended in 1993, is a national physical planning document for the Dutch Wadden Sea as a basis for all further planning, conservation and management for the area of all state, regional and local authorities. The Memorandum states the overall objective for the

Wadden Sea policy, the policies with respect to activities and utilization of the area and general arrangements with respect to coordination of policy and management.

The Memorandum is basically implemented along two lines. Firstly, as opposed to the German policy where the regional and local jurisdiction of the area has been curtailed, the Dutch Wadden Sea has been deliberately brought under the jurisdiction of the adjacent counties and municipalities with the aim of ensuring an integrated physical planning of the area down to the lowest level and with public participation in the planning phase. This has resulted in the adoption of regional planning schemes and local development plans, which are binding for individuals, for the Wadden Sea.

The second line of implementation is the designation of the major part of the Dutch Wadden Sea as a State Nature Monument under the Nature Conservation Act. The Nature Monument determines that, without permission, it is prohibited to undertake activities which destroy and damage the protected area including its flora and fauna. An overall management strategy and a system of management plans have been adopted to ensure the implementation of policies in management and the necessary coordination between sector interests (CWSS 1991a).

The Danish conservation and planning scheme for the Wadden Sea is a mixture of the German and Dutch approach. The Danish part of the Wadden Sea was designated as a Wildlife and Nature Reserve in 1979/1982, encompassing a zoning system comparable in certain aspects with the German system. In addition, the Wadden Sea, major parts of the Wadden Sea Islands and the adjacent marsh land have been designated as Ramsar Site and a Special Protection Area according to the EC Bird Directive, which appoints the area with a priority position for regional and sectoral planning and which furthermore has special implications according to national legislation and administrative regulations. In general, according to Danish law, this ensures the Wadden Sea the highest protection status (Koester 1989).

From the outset, the Dutch Wadden Sea policy aims at an integrated approach to the protection and management of the Wadden Sea as a part of a larger coastal area. The Memorandum states that a number of activities outside of the area of the Wadden Sea shall be taken into account according to the degree in which such activities have a negative impact. An issue related to the integrated

planning and management system is the overall coordination of sectoral policies. In contrast to the German approach, in which e.g. the responsibilities of the regional authorities regarding nature conservation in the area has been curtailed or ended, there are basically several authorities responsible which may not always ensure unified management and, therefore, complex coordination mechanisms are necessary.

A further essential issue is that the Dutch approach is related to a multi-purpose-concept use of the Wadden Sea (CWSS 1992b). In the framework of the sustainable protection of the Wadden Sea, human activities are basically possible according to the Memorandum. It may however not always be possible to pursue conservation objectives and ensure a wise use of the area without restricting certain activities in time and/or space. A zoning of a number of activities, in particular of recreation and fisheries, has therefore been introduced progressively as a management instrument and is currently part of the amended Memorandum.

4. Trilateral Wadden Sea policy: sustainable utilization of a shared coastal system

As can be noted on the basis of the examination of the national protection measure, there is a convergence in terms of principles and objectives. Put in simplified terms: the German approach works from within to the outside whereas the Dutch-Danish approach works from the outside to within. It was noted at the 6th Trilateral Governmental Conference on the Protection of the Wadden Sea in 1991, at which the three governments took stock of the cooperation between the three countries almost 10 years after the adoption of the Joint Declaration, that there were indeed a number of major similarities in protection measures in terms of objectives of protection and in terms of management based on a zoning system.

It was noted though that there also existed a number of differences between the protection regimes of which the major ones are:

- Differences with respect to implementing the concept of the development of natural processes including the weighing of interests;
- Differences with respect to the delimitation of the Wadden Sea, both landward and seaward;
- Differences with respect to the regulation of human activities and management of the area (CWSS 1992a Ministerial Declaration).

Beyond these, there are also the existing differences in the legal and administrative systems, as indicated above, e.g. with respect to responsibilities in the field of nature conservation. The German federal states are responsible for nature conservation according to the Constitution within the federal framework act, whereas the federal government is responsible for foreign relations. In Denmark and the Netherlands, both is the responsibility of the central government. Such differences explain, to a certain extent the differences in protection regimes.

Further, it was concluded that the assessment of the current state of the Wadden Sea leads to the conclusion that the quality of the ecosystem needs to be significantly improved in order to restore and maintain its natural potentials. The sustainable utilization in a way compatible with the maintenance of the natural properties of the ecosystem is the wise use of wetlands as defined by the Ramsar Convention, which is one of the Conventions of the Joint Declaration.

It was therefore decided by the three governments to define the wise use principle for the Wadden Sea as a shared wetland system for its conservation and sustainable utilization by adopting a common guiding principle, management principles and common objectives for the human utilization of the area. These principles and objectives shall further assist in bridging the differences in legal and administrative systems, so that it is in principle aimed at solving common problems on a common basis and thereby increasing the mutual effectiveness of the measures.

4.1 Guiding principle and management principles

The guiding principle of the trilateral Wadden Sea policy is **to achieve, as far as possible, a natural and sustainable ecosystem in which natural processes proceed in an undisturbed way.**

This principle aims at

- **maintaining** the water movements and the attendant geomorphologic and pedagogical processes;
- **improving** the quality of water, sediment and air to levels that are not harmful to the ecosystem;
- **safeguarding and optimizing** the conditions for flora and fauna including
  - Preservation of the Wadden Sea as a nursery area for North Sea fish;

    - conservation of the feeding, breeding, moulting and roosting areas of birds, and the birth and resting areas for seals as well as preventing disturbance in these areas:
    - Conservation of the salt marshes and dunes;
- **maintaining** the scenic qualities of the landscape, in particular the variety of landscape types and the specific features of the wide, open scenery including the perception of nature and landscape (CWSS 1992a Ministerial Declaration)

These elements are the **basic conditions** for the Wadden Sea ecosystem aiming at maintaining the ecological integrity of the system as a whole (de Jong 1992).

In order to further narrow the differences in legal and administrative systems, seven common management principles have been adopted for the Wadden Sea (CWSS 1992a Ministerial Declaration, CWSS 1992b). An important common management principle is the **precautionary principle**, namely to take action to avoid activities which are assumed to have significant damaging impact on the environment even where there is no sufficient scientific evidence to prove a causal link between activities and their impact. The definition has, in the framework of Wadden Sea cooperation, been extended from including substances to also include activities.

A further management principle is the **principle of careful decision making** on the basis of the best available information. This means, in a number of cases environmental impact assessment studies are requested. Regarding the Dutch part of the Wadden Sea, a special Executive Order on Environmental Impact Assessment Procedure is being issued with more activities and lower thresholds for individual activities than for the Netherlands in general. It has been further agreed between the Wadden Sea countries to aim at harmonizing their environmental impact assessment procedures for the Wadden Sea.

Other principles concern the principle of avoidance of activities which are potentially damaging to the Wadden Sea, the principle of translocation of harmful activities and the principles of best available technology and best environmental practice.

4.2 Common objectives

The Wadden Sea area is an area where people live, work and recreate. Activities in the Wadden Sea and utilization of its resources are possible within the framework of the principle of conservation and sustainable utilization. The three governments have agreed to a set of common objectives which defines the principle of conservation and wise use with respect to human activities and utilization of the Wadden Sea as a whole.

The common objectives cover all the main common activities and utilization in the Wadden Sea and in adjacent areas for those activities that may have an adverse impact on the Wadden Sea. It is essential to emphasize that the Wadden Sea area is dealt with as a coherent system with a level of regulation accordingly. It would be too extensive to go into detail with all the objectives and therefore only examples of agreements that concern the Wadden Sea itself, adjacent areas of the Wadden Sea and a larger area are stated.

Concerning the Wadden Sea itself, including the salt marshes outside of the seawall and the coasts, objectives have been set for a large number of activities on different levels of specification, e.g.:

- It is in principle agreed to prohibit embankment and to minimize unavoidable loss of biotopes by sea defence measures;
- The negative impact of mussel fishery and cockle fishery, in areas where this is allowed, shall be limited by closing considerable parts of the Wadden Sea permanently including intertidal and sub tidal areas;
- Hunting of migratory species will be progressively phased out.

It appears from the agreements that it is left up to the responsible national authorities to decide on the relevant time-schedule and the spatial scale, which may depend on the conditions in terms of e.g. morphology and differences in intensities of utilization in the different sub regions of the Wadden Sea.

Further hereto, there are a number of activities in adjacent areas which have an adverse impact on the Wadden Sea. These activities concern shipping in the North Sea, harbour and industrial facilities immediately adjacent to the Wadden Sea, the use of wind energy in a zone adjacent to the Wadden Sea and civil air traffic. The level of agreed objectives is in particular directed at maintaining the present level of activities so as to minimize the impact on the Wadden Sea itself from outside.

A further level of common activities is the reduction of the input of surplus nutrients and pollutants. The improvement of the chemical situation is a basic condition for the sustainable utilization of the Wadden Sea (see de Jong, chapter ...). Effective measures can only be taken in the catchments area of the North Sea in conjunction with other adjacent states at, in particular, the North Sea Conferences but also in the framework of the European Community.

Concerning the wide international importance of the Wadden Sea for migratory birds, the Wadden Sea states support the initiatives towards establishing a Western Palaearctic Waterfowl Agreement in the framework of the Bonn Convention, which will set up a mechanism for the protection and management of migratory birds along the flyways from the arctic breeding areas through the European staging areas, of which the Wadden Sea is a key site, to the wintering areas in Africa (CWSS 1992a: Ministerial Declaration).

5. Implementation of the principles and objectives: Wadden Sea coastal management

These principles and objectives are now in the process of being implemented on the national level through the authorities which are responsible for the protection and management of the Wadden Sea, and by making use of the mechanisms existing for that purpose. The Wadden Sea states have further agreed, at the last Governmental Conference, to undertake the necessary steps to establish a coherent special conservation area covered by a coordinated management plan. Also, this agreement is in the process of being implemented in the framework of cooperation. The aim of protecting and managing the Wadden Sea area as an ecological entity is therefore an ongoing process.

The formulation of a policy of sustainable utilization for the Wadden Sea as a whole is, in summary, directed towards maintaining and, where necessary, restoring its natural potentials as part of a larger coastal system, and complementary bridging differences in legal and administrative systems between the countries and states. The wise use objectives must therefore be formulated in relation to the area and the level and intensities of the developments and utilization. The basic conditions for protecting, maintaining and, where necessary, restoring the integrity of the Wadden Sea as an ecological entity is the conservation and wise use of the system. Such objectives have also been formulated by non-governmental interest organizations previous to the Wadden Sea governmental Conference in 1991 (WWF 1991).

The Wadden Sea states have been in the process of managing the Wadden Sea as a unique world wide important coastal system for about 25 years. Three aspects of protection and management should be emphasized in particular:

- the ecological integrity of Wadden Sea can only be maintained and restored by the conservation and the wise use of the area;
- the Wadden Sea, including the adjacent land and sea territory must be protected and managed in an integrated way in order to maintain and restore its integrity by applying integrated planning, by applying conservation measures and by integrated management; the principle of sustainable utilization should therefore become an integrated part of all relevant sector activities;
- the Wadden Sea is a shared system which must be protected and managed on the basis of common principles and objectives cutting across differences in legal and administrative systems; these common principles and objectives of sustainable utilization can be applied to (shared) coastal systems for an integrated coastal zone management.

References

- Agger, P. (1992): Aims and goals for the future management of the Danish Wadden Sea, in Dankers, N., Smit, C. J. & Scholl, M. (1992): Proceedings of the 7th International Wadden Sea Symposium, Ameland 1990. 1992, pp. 69-72.

- Andresen, F.H. (1992); Future management of the Schleswig-Holstein National Park, in Dankers, N., Smit, C. J. & Scholl, M. (1992): Proceedings of the 7th International Wadden Sea Symposium, Ameland 1990. 1992, pp. 73-75.

- Burbridge, P.R. (1990): Protection and management of coastal areas:Integrated coastal zone management concepts as a contribution to the conservation of natural resources. Unpublished, 1991.

- Burbridge, P. R. (1991): The potential designation of the Wadden Sea as a World Heritage Site. A report for UNESCO. Unpublished, 1991.

- Common Wadden Sea Secretariat (CWSS, 1991): The Wadden Sea. Status end developments in an international perspective. 1991.

- Common Wadden Sea Secretariat (CWSS, 1992a): Sixth trilateral Governmental Wadden Sea Conference, 1991. Ministerial Declaration-Seal Conservation and Management Plan-Memorandum of Intent-Assessment Report 1992.

- Common Wadden Sea Secretariat (CWSS, 1992b): Wise use and conservation of the Wadden Sea. 1992.

- Helbing, C. (1992): Future management in the Niedersachsen part of the Wadden Sea, in Dankers, N., Smit, C. J. & Scholl, M. (1992): Proceedings of the 7th International Wadden Sea Symposium, Ameland 1990. 1992, pp. 83-86.

- Jong, F. de (1992): Ecological Quality Objectives for marine coastal waters: The Wadden Sea Experience in International Journal of Estuarine and Coastal Law, Vol. 7, no. 4, pp 255-276.

- Kleinmeulman, A.M.W. (1992): Future management of the Wadden Sea, a dynamic task, in Dankers, N., Smit, C. J. & Scholl, M. (1992): Proceedings of the 7th International Wadden Sea Symposium, Ameland 1990. 1992, pp. 87-89.

- Koester, V. (1989): The Ramsar Convention. On the Conservation of wetlands. A legal analysis of the adoption and implementation of the Convention in Denmark. 1989.

- Mensbrugghe, Y. v. d. (1990): Legal status of International North Sea Conferences Declarations, in Freestone, D. and I.J.lstra, T. (1990): The North Sea: perspectives on regional environmental cooperation: special issue of the International journal of estuarine and coastal law. London, 1990 pp. 15-22.

- Mörzer Bruyns, M.F. & Wolff, W.J. ed. (1983): Nature conservation, nature management and physical planning in the Wadden Sea area. The ecology of the Wadden Sea. Report 11. 1983.

- Peet, G. and Gubbay, S. (1990): Marine protected areas in the North Sea, in Freestone, D. and I.J.lstra, T. (1990): The North Sea: perspectives on regional environmental cooperation:special issue of the International journal of estuarine and coastal law. London, 1990, pp. 241-251.

- Rudfeld, L (1990a): 25 års beskyttelse af Vadehavet. Miljøministeriet, Skov- og Naturstyrelsen. 1990.

- Rudfeld, L. (1990b): The Danish Wadden Sea - 25 years of protection in Dankers, N., Smit, C. J. & Scholl, M. (1992): Proceedings of the 7th International Wadden Sea Symposium, Ameland 1990. 1992, pp.199-213.

- Wolff, W.J. ed. (1975): Proceedings of the Conference of Wadden Sea experts held at the Island of Schiermonnikoog. The Netherlands, 26-28 November 1975. Contribution nr. 3. of the Wadden Sea Working Group.

- Wolff, W. J. (1990b): Ecological developments in the Wadden Sea until 1990 in Dankers, N., Smit, C. J. & Scholl, M. (1992): Proceedings of the 7th International Wadden Sea Symposium, Ameland 1990. 1992, pp. 23-32.

- World Wide Fund for Nature (WWF, 1991): The Common Future of the Wadden Sea. A report by the World Wide Fund for Nature. Flensburg 1991.

- Zwiep, K. v.d. (1990): The Wadden Sea: A yardstick for a Clean North Sea in Freestone, D. and I.J.lstra, T. (1990): The North Sea: perspectives on regional environmental cooperation:special issue of the International journal of estuarine and coastal law. London, 1990 pp. 201-212.