

# LIFE AFTER SHRINKAGE

CASE STUDIES:  
LOLLAND AND BORNHOLM



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**Abstract:**

Shrinkage phenomenon, its dynamics and strategies to counter the decline performed by diverse stakeholders, are investigated in order to define the dimensions and the scope carried out in the places where this negative transformation is undergoing. The complexity of this process and the different types of decline entail a study in different levels from the European to national (Denmark) and finally to a local level. Thus, two Danish municipalities (Lolland and Bornholm) are chosen as representatives to contextualize this inquiry and consequently, achieve more accurate data to understand the causes and consequences of the decline as well as their local strategies to survive to this changes.

# Preface

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This Master thesis called “*Life after shrinkage - Case studies: Lolland and Bornholm*” is conducted in the 4<sup>th</sup> semester of the study program Land Management at the department of Architecture, Design and Planning (Aalborg University) in Copenhagen in the period from February to June 2016.

The style of references used in this thesis will be stated according to the Chicago Reference System. The references are represented through the last name of the author and the year of publication and if there are more than one author, the quote will have *et al.* after the first who is named in the data base. In the figures, the source will be followed with the name of the page in which it has been taken. If a reference is stated in the end or in the middle of a sentence, it only refers to the sentence. If a reference is stated after a sentence, the reference covers the whole paragraph. The quotes in the project are indicated in quotation marks and italics.

The interviews and the schema of the thesis are in the Appendixes.

## Acknowledgments

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I would like to thank my supervisor, Daniel Galland, for his guidance, advices and feedback throughout the whole process.

Two interviews have been conducted and I will thank Jørgen Nielsen and Rune Holm for their time and sharing with me the needed information to complete this investigation.

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# 1. INTRODUCTION

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This thesis focus on the shrinkage phenomenon and the strategies and visions that are implemented to counter the decline. The development of the cities/municipalities what suffer shrinkage experience decline in its own structure where, negative growth is a common denominator in every scope. Thus, population, economy and infrastructures fall, and it produces an effect in the city that could make it disappear. The complexity of the process creates a feedback due to the interactions of the stakeholders and the governances, but also, the context surround it. This means, for example that the decline of investment carried out by the government could lead to the economic recession of the place, unemployment and consequently loss of population.

The cities or municipalities affected need to deal with the impacts through the development of new strategies and from this issue, it is where planners and policy makers come into action. They have to provide solutions conditioned by the idiosyncrasy of the place. In practice, the complexity of this task embraces, not only the analysis of the potential areas which the place can grow (industry, tourism, e.g.), but also involve the inhabitants to stay or people to visit the city.

Therefore, the challenges of this global phenomenon and also the solutions implemented vary, creating a problem with many variables and different levels of governance.

Although Denmark is not one of the countries what undergoes this experience with more intensity, the demographic changes are visible and they are going to be analysed in order to study its dynamics and how planners and different stakeholders counter the phenomenon, if it is really possible.

Moreover, the investigation concerns the analysis of two Danish municipalities chosen as representative case studies: Lolland and Bornholm. These municipalities, considered peripheral areas, narrow this inquiry due to the importance of the contextualization when addressing shrinkage, to understand its dynamics, challenges and strategies to recover themselves of this negative development.

## 2. RESEARCH PROBLEM FORMULATION

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The main research problem of the thesis is the analysis of the shrinkage phenomenon in a Danish context. In order to establish a deeper understanding of the problem, the dynamics and the conceptualization of the problem is being framed in the European background and, afterwards two Danish municipalities are investigated as case studies for considering their empirical approaches to counter the shrinkage.

### 2.1 Research design

This thesis, as an empirical inquiry, has a research design that configures the logical sequence that specifies the links from the problematization, the experimental data and finally, its discussion and conclusions (Yin 2002). The exploration should be logical, due to the implicit organization that it is required in the performance of the investigation that must connect every part with coherence. The investigation is based also in case studies where the proximity to reality, which the case study entails, and the learning process, which it generates for the researcher, will often constitute a prerequisite for advanced understanding (Flyvbjerg 2006). Moreover, the data that the case studies provide are authoritative (Zartman 2005) because happened, not what could or might have happened.

First of all, shrinkage is researched in a holistic form and in the European framework where a description of the phenomenon is achieved by highlighting its dynamics. To do so, a theoretical study of the parameters that affects the cities where the decay is undergoing, it will accomplish the basis for the investigation. Moreover, strategies and visions of growth to counter the weakening are examined in an also, theoretical point of view.

Secondly, the decline is considered in a Danish context where this negative development is affecting in the peripheral and rural areas of the country. Thus, this contextualization is carried out by the analysis of different demographic trends in common, what serve as testing and quantitative data from a national perspective. Furthermore, it is necessary for the research, how the structure in the Danish system is, and the levels in which, in a governance prospect, is structured the country. Hence, the strategies of planners and how can they be organised in order to form networks are also evaluated.

Thirdly, the Danish municipalities chosen as case studies (Lolland and Bornholm) will embrace local insights and information of the phenomenon. The investigation clarifies the real-life context (Yin 2002) of the municipalities. Following the same structure in both cases, it will be possible the comparison of their dynamics and their local strategies for the development of the municipalities.



In the appendix 3, it can be seen a schema of the structure of the thesis.

To conclude, another objective of the thesis, is the evaluation of the attention of this problem by the surrounded municipalities, private stakeholders or partnerships. This external agents are basic in the development of the municipality and will bring, not only the relevance of equity and cohesion within the country, but also the attention and positive branding to this municipalities in decay.

In appendix 3, can be observed the thesis structure scheme.

The following section will define the thesis research problem by a main research question and sub-research questions:

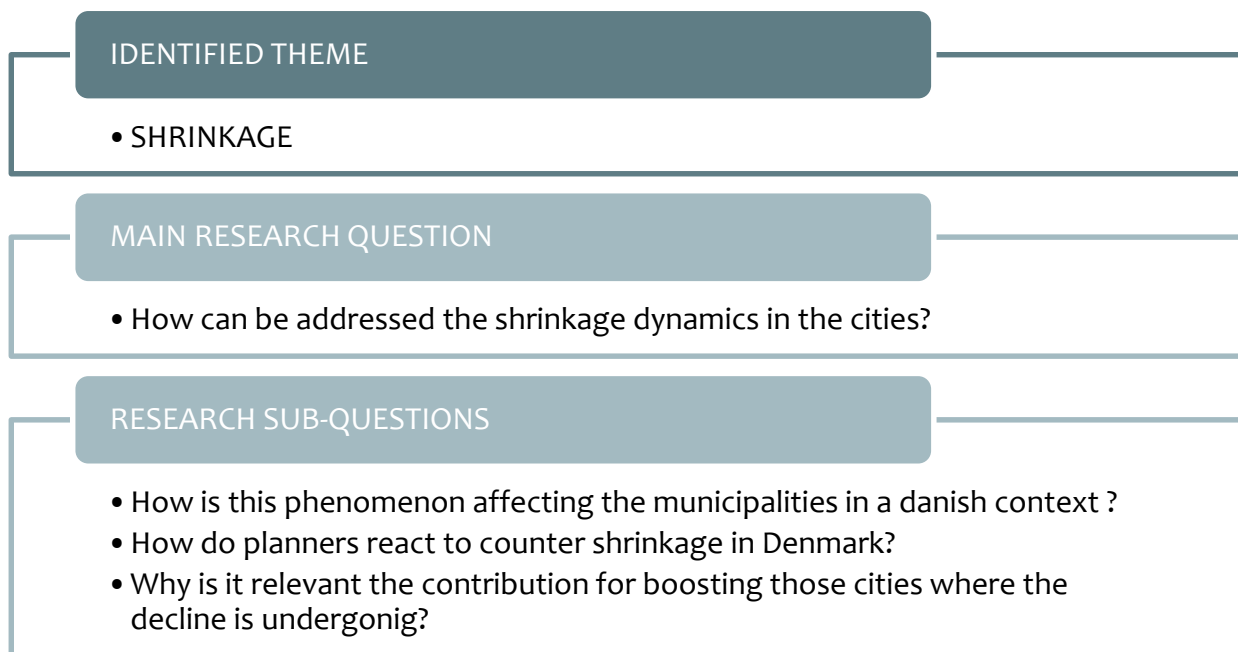


Figure 1: Overview of theme and research problematization. Author's work

## 2.2 Main research question

The main research question is the basis for the thesis and its study provides the foundations for the consequent analytical practice and the comparison of the case studies. Its objective is the characterization of the phenomenon in order to understand it through this research. Hence, a selection of relevant theory, interviews, data collection and articles will provide and conduct the development of the project.

- **How can be addressed the shrinkage dynamics in the cities?**

The understanding of this complex issue embraces a theoretical task where the conceptualization and the dynamics of shrinkage are explained. Thus, a global point of view from the European Union is clarified to be

able to find out possible common perspectives among the symptoms in different cities where shrinkage is undergoing. Moreover, this will allow to know the inherent difficulties of the concept due to the high number of variables involved in the process.

The shrinkage dimensions exposed in this thesis cover the areas where the decline is affected and create a frame where the basis of the strategies and challenges to tackle shrinkage will be exposed.

Besides that, it will be also highlighted strategies and policies taken by different cities for coping the decline. Therefore, real examples of planning policies are taken into account for a further comprehension of the dynamism of the phenomena.

## 2.3 Research sub-questions

The aim of the research sub-questions is to complete information of the investigation from the main research question. This qualitative approach will determine the investigation and provide a more focused value to the shrinkage phenomena.

- **How is this phenomenon affecting the municipalities in a Danish context?**

Once the dynamism of the shrinkage cities approach is clarified, the analogies of the main indicators analyzed in an European context are addressed in Denmark. Hence, the same main dimensions addressed in a more holistic way, are contrasted in a national context.

In order to understand how the decline process is produced and the challenges that these cities have to confront, it is important to develop an explanation about how the measurements are implemented. Therefore, the levels in which Denmark are structured after the reform in 2007 will provide a clarification about how are the new limitations and the power of action since this new establishment came up.

To do so, the interviews to planners from the case studies will validate the answer of the investigation by their own professional approach applied in the chosen municipalities. Furthermore, newspapers and descriptive data (statistics, e.g.) are also considered in the interest of the comprehension for the subsequent analysis.

- **How do planners react to counter shrinkage in Denmark?**

The investigation aims also the planners' answer to counter the shrinkage in the municipalities. Therefore, the introduction of the phenomenon in Denmark and subsequently, the research in the selected case studies will offer a frame in the inquiry for the final discussion. First approaches of the municipalities explaining their inherent characteristics (geography, demographic evolution, economical incomes, etc...)

will clarify their own peculiarities and it will serve to find out the reasoning for the development of the decline.

The validation of the answer will be given through the interpretative analysis of the documents and data, but mostly with the interviews with the planners who will deliver a qualitative support for the investigation.

To conclude, the considerations of their local plans will be underlined and the basis for the comparison among the case studies.

- **Why is it relevant the contribution for boosting those cities where the decline is undergoing?**

In the last question, the targeted purpose is to focus the (positive) effects in the development of cities what undergo shrinkage when private and/or public stakeholders are involved. This question does not embrace social topics as inequity or cohesion of the Danish population in general terms but, it will be an approach of the possibilities for growth in those places with a good planning and soft values.

The analysis of different reports made by Realdania, Videcenter for Kystturisme – AAU, Partnerskab for Østersøturisme and the interviews made to the local planners support the acceptance of the answers. The investigation, from this perspective, lies on the possibilities of the development of the municipalities, their potential and attractiveness. Planning in a holistic way and in long terms could change the decline areas and investors impact when this occurs, can be decisive for building an ascent line in the indicators analyzed in the shrinkage (employment, education or population development) for boosting the municipalities.

### 3. METHODOLOGY

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This chapter explains the methods employed in this project and the explanation for the chosen project design. Once the research strategy of the shrinkage's problematization is described, it is necessary to define the followed methods and the reasons for the taken decisions. Consequently, it will be a justification for validating the process for the findings in the investigation. To facilitate the reader (and the author's work) the dimensions and indicators follow the same schema in every part of the thesis in order to simplify the comparison in every level.

The methodological strategy used in this thesis is the research through case studies in order to embrace the problematization exposed in the second chapter. Therefore, it is a comprehensive research strategy approached to data collection, its analysis and the synergy between them. (Yin 2002).

As Yin (2002) exposed, the components of this investigation design have:

1. **Study's questions:** The chosen types of questions are "how" and "why" due to their own explanatory and descriptive characteristics and, therefore the of need clarification. They are the most advice types of questions when case studies are going to be developed and the investigator has little or no control over the phenomena (more observational).
2. **Study propositions:** Not used in this thesis.
3. **Units of analysis:** It depends on the primary research question what is, in this case, the shrinkage and its dynamism.
4. **The logic linking the data to the propositions and interpretation criteria:** It focuses in reasons for links used to structure the data (quantitative and qualitative) collected for the final interpretation and, in this project, comparison for the final conclusions.

In this project the use of the combination of quantitative and qualitative data contribute to achieve the best answers to the research questions (Flyvbjerg 2006) due the methodology is based in a problem-driven approach and the case studies investigation. The discussion and conclusions are provided by the findings are qualitative but the data of the inquiry is qualitative and quantitative.

### 3.1 Methodological approach

In order to establish typologies in the used methodological paradigm<sup>1</sup>, this section includes a philosophical foundation for the inquiry in which is explained the strategy behind the methods employed in the investigation. Hence, there is no single approach, rather, different typologies, operating at different levels of abstraction and focusing on various lines of distinction, will need to be adopted on different occasions for different purposes (Hammersley 2012).

Among the different approaches for selecting the social and educational research paradigms, it must be taken into account not only the nature of the phenomena being investigated (ontology) and/or about how they can be understood (epistemology), but also the purposes of research (Hammersley 2012). Thus, the project is conducted through a theoretical literature and the analysis of two case studies. The combination of this mixed approach add more value to the investigation due to the dynamics in between them and the interplay with each other. Included in the analysis of the case studies, the empirical data framing the study comes via the senses from direct experience (Hammersley 2012), as the interview with the planner and the counsellor have provided.

As commented above in the components of the investigation, the process of interpretation entails the understanding and assessment of the data and the theory (Tan, Wilson y Olver 2009).

#### 3.1.1 Interpretation: Hermeneutics phenomenology

This inquiry adopts the terms of the hermeneutic phenomenology<sup>2</sup> because, it doesn't embrace only a method of research *per se*, it entails also theoretical perspectives and strategies that lies beyond the methods employed in a particular study (Crotty 1998). Moreover, it is well positioned as a suitable methodology for human sciences research (Tan, Wilson y Olver 2009).

The interpretation requires the understanding the distinctive nature of the perceptions, beliefs and attitudes what are completed with the previous assumptions about the researched area. The most significant approach is the relationship between explanation and understanding, the unfolding of which involves the movement back and forth between the parts of the text and a view of the whole, during the process of interpretation (the hermeneutic arc). Therefore, in the investigation of shrinkage, the process of

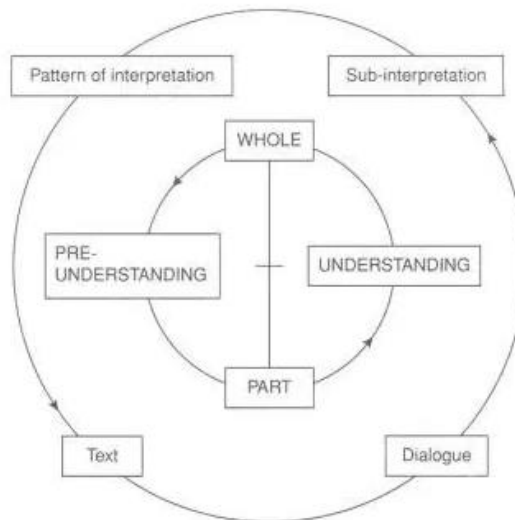
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<sup>1</sup> The standard, everyday meaning of 'paradigm' is 'exemplar' or 'model'. But, in the context of research methodology, the term has also come to mean a set of philosophical assumptions about the phenomena to be studied, about how they can be understood, and even about the proper purpose and product of research (Hammersley 2012)

<sup>2</sup> Hermeneutics is the "art and science of interpretation" (Ezzy, 2002, p. 24), especially as it applies to text. Phenomenology is the study of the essence of a phenomenon as it presents itself in lived experience in the world (Crotty, 1998).

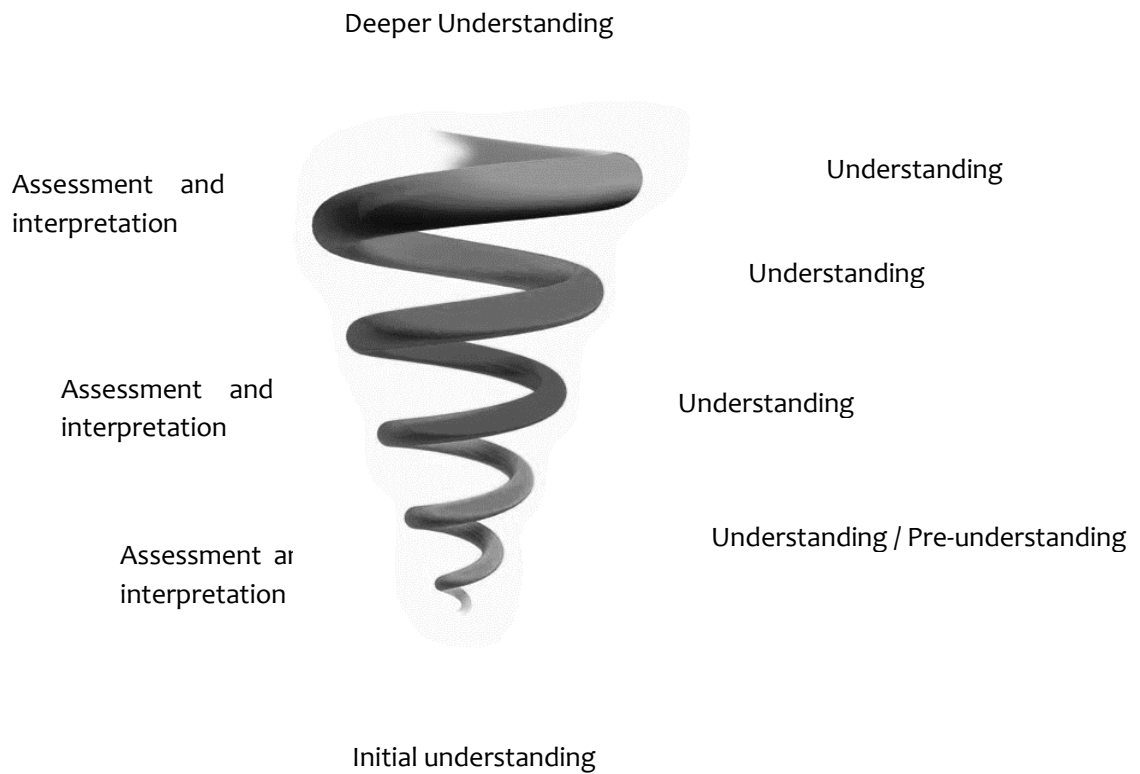
knowledge is carried out through the theoretical readings and empirical observations and the synergies between them.

The hermeneutics circle visualise the process about how is the understanding is realized. Throughout the activity of reading, people perform minimal or sub-interpretations, which may realign their frames of interpretation. In doing so, they enter into a 'dialogue' with the text and, by extension, with other minds, past as well as present. In the centre of the circle "part" and "whole" are representing the different understandings of data of a part of a book (for example) in isolation than the same part in conjunction with the entire work (K. B. Jensen 2013). Hence, in the first approaches for the collection the relevant data for this inquiry, the readings of part of them provide a preliminary understandings of the phenomena and, when the reading is complete, the understanding and the interpretation of the text is fulfilled. Nevertheless, the process of interpretation continues with the next text what can be considered as another part.



**Figure 2: The hermeneutic circle. Source: Alvesson & Skjöldberg, 1994**

Therefore, another principle in the hermeneutics could be represented as a spiral because this interpretation comes to a superior level as the readings advance, creating a never ending loop.



**Figure 3: Hermeneutics spiral. Author's work based in Jensen, 2013**

The comprehension of the texts and their interpretation have followed this spiral in such a way that, as the readings were deeper the understanding was growing. This provided narrowed research questions to fulfil the expectations of the learning development. Hence, the research questions and the structure of the thesis have been getting more precise in the process of performing the thesis.

To conclude, as Gadamer<sup>3</sup> points out, it can be called a collaborative process due to the interplay between the reader and the text but, on the other hand, due to the duality interpreted-interpreter and because interpretation is always based upon presuppositions, it is therefore always shaped by the particular socio-historical location of the interpreter (Hammersley 2012) and this method has been also criticized. Therefore, subjectivity, ambiguity, pre-comprehension and pre-judice are the objections to the hermeneutics methodology.

<sup>3</sup> The founder of Hermeneutics School

## 3.2 Methods and sources of evidences

In this section, it will be explained the type of sources in which the investigation has been carried out and as commented before in the last sub-chapter, the use of mixed methodology (and qualitative and quantitative) as implementation technique. Firstly and, focusing on this inquiry, the sources have been:

- **Interviews:** There have been two interviews. The first interview was in Rødby (Lolland Municipality) the 27<sup>th</sup> April with the planner Jørgen Nielsen. The visit provided the experience of discovering the reality of the municipality where it was difficult to meet people in the streets. Therefore, the environment that covers the shrinkage could be proved. The interview was long and deep and, even there were a list of questions, Jørgen explained me the situation of the place in a very pedagogic and interesting form (See annex 1) what fulfilled all the expectations. The second interview was via Facetime<sup>4</sup> the 18<sup>th</sup> May with the newcomer's counsellor in Bornholm, Rune Holm. His role is to guide the people who arrive to the island to settle down by helping to find jobs, housing, schools... His deep knowledge of the island provided a great help to understand the strengths and weaknesses what can be found when people move there.
- **Documentation:** Plans and strategies from the municipalities have been focused to address the planners' contribution to coping the decline in their municipalities. Reports of networks and partnerships (with Realdania as main stakeholder) have also provide information about projects and campaigns to tackle the negative development in the case studies. Furthermore, journals researches have been also a source of information in the investigation. Even it is known that a weakness of this source is their guarantee of quality, the comparison of data among them has been contrasted to achieve the most valuable findings. They have been use mostly to provide a theoretical framework where the shrinkage dynamism was in focus. The theory applied in the investigation is processed as a **deductive approach** where the theoretical ideas studied about the shrinkage phenomena in Europe (subjected to empirical scrutiny), are analysed in order to deduce the answers to the research questions (Bryman, Social research methods 2016)
- **Statistics:** Danmarks Statistik and Nøgletal have provided quantitative data of the shrinkage indicators analyzed for comparing and describing the real situation along the time.
- **Direct observations:** The trip to Lolland provided a direct perspective of its contextualization and a testimonial witness of the decline in the municipality. From another point of view, the

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<sup>4</sup> Video call



community sense in the municipal office where the interview was granted, offered me the perception of closeness and generous values in the people.

### 3.2.1 Mixed method approach

The mixed methodology paradigm conducts this inquiry in which quantitative and qualitative approaches are combined for the purpose of breadth and depth of understanding and corroboration (Johnson, Onwuegbuzie and Turner 2007). This ensures that the issue is not investigated through only one point of view, but more approaches so it allows the understanding and validity of the findings (Baxter and Jack 2008). This method offers also an approach in the generation of the research questions and their answers because it will provide superior research findings and outcomes (Johnson, Onwuegbuzie and Turner 2007).

Therefore, the application of this method aims to both generalize the findings about the shrinkage phenomenon in a general scope (framed in the EU) and develop a detailed view of the meanings of that concept in Denmark and the case studies.

The combination of both data have an equal weight and, therefore it will facilitate the identification of the links between the different levels of theory, epistemology and methodology. To do so, the description of the logical relations between the qualitative and quantitative findings and the theoretical concepts in the study will demonstrate the way in which both qualitative and quantitative data can be combined to facilitate the understanding of shrinkage. (Ostlund, et al. 2011).

### 3.2.2 Quantitative research

The research design followed through questions demands a quantitative research for verifying the existing theory. This quantitative data is represented by statistical information and measured on selected trends embracing the same dimensions analysed in the theoretical review. This empirical data could be already done by the reports of the strategies of the municipalities and also could be extracted from statistical information shaped in order to represent the needed values of the investigation of the phenomena.

Positivism can be related to quantitative research which it is essential in this inquiry due to the necessity of testing the behaviour of the evidences in order to compare them to the theories (Hammersley 2012).

For statistical investigations, Danmark's statistik and Noegletal have been used as tools for achieving the data. Afterwards, this data has been exported to .xls<sup>5</sup> format and afterwards the tables have been created.

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<sup>5</sup> Using Microsoft excell

Reports from the municipalities and strategic plans provide also data for the comprehension of the context and helps to compare the analysis of the case studies. Moreover, the analysis of documentation developed for the creation of the theoretical framework (scientific papers, periodical articles and reports) have been also an important component in the research.

The material available about shrinkage allow to collect information that is used as interpretative validation of the sources. Hence, it will provide different perspectives in the research for the creation of a frame of knowledge in which the reliability of the process increases.

### 3.2.3 Qualitative research

Through the qualitative research, the analysed and interpreted documentation is tested and the knowledge is gained by soft methods where values, meanings and opinions are discovered (Bryman, Social research methods 2012 ). As a relevant source for evidence, the interviews of one planner and a counsellor have been carried out.

In this type of research the data is flexible, therefore there is an adaptation of the interaction between the researcher and the interviewed where the use of open-ended conduct the respond in their own words, not as fixed as quantitative methods provide.

In the next table, it is shown the comparison in between both approaches:

	Quantitative	Qualitative
General framework	<ul style="list-style-type: none"> <li>• Seek to confirm hypotheses about phenomena.</li> <li>• Instruments use more rigid style of eliciting and categorizing responses to questions.</li> <li>• Use highly structured methods such as questionnaires, surveys, and structured observation</li> </ul>	<ul style="list-style-type: none"> <li>• Seek to explore phenomena.</li> <li>• Instruments use more flexible, iterative style of eliciting and categorizing responses to questions.</li> <li>• Use semi-structured methods such as in-depth interviews, focus groups, and participant observation</li> </ul>
Analytical objectives	<ul style="list-style-type: none"> <li>• To quantify variation</li> <li>• To predict causal relationships.</li> <li>• To describe characteristics of a population</li> </ul>	<ul style="list-style-type: none"> <li>• To describe variation</li> <li>• To describe and explain relationships</li> <li>• To describe individual experiences</li> <li>• To describe group norms</li> </ul>
Question format	<ul style="list-style-type: none"> <li>• Closed-ended</li> </ul>	<ul style="list-style-type: none"> <li>• Open-ended</li> </ul>

Data format	<ul style="list-style-type: none"> <li>Numerical (obtained by assigning numerical values to responses)</li> </ul>	<ul style="list-style-type: none"> <li>Textual (obtained from audiotapes, videotapes, and field notes)</li> </ul>
Flexibility in study design	<ul style="list-style-type: none"> <li>Study design is stable from beginning to end</li> <li>Participant responses do not influence or determine how and which questions researchers ask next</li> <li>Study design is subject to statistical assumptions and conditions</li> </ul>	<ul style="list-style-type: none"> <li>Some aspects of the study are flexible (for example, the addition, exclusion, or wording of particular interview questions)</li> <li>Participant responses affect how and which questions researchers ask next</li> <li>Study design is iterative, that is, data collection and research questions are adjusted according to what is learned</li> </ul>

**Table 1: Comparison between quantitative and qualitative approaches. Source: FHI, 2005**

### 3.3 Rationale behind the chosen case studies

The idea of developing a project about shrinkage emerged since the acknowledgements received from the Land Management second semester when I did, together with my group colleagues a project what dealt about the problems of the peripheralization in Denmark. After the first meeting with my supervisor, Daniel Galland, I decided to continue my investigations about the decline in the Danish municipalities that suffer the decay.

My goal was to narrow in the phenomena but, focusing also in the visions and strategies in which the planners have to develop in order to tackle the shrinkage. The case studies will not only contribute to my own knowledge of the individual, organizational, social and political aspects of the phenomena (Yin 2002), but also to deep into its complexity. As the investigation proceed, the aim was also to find two representative municipalities to inquire deeply understanding of the problematic and their possible solutions. Moreover, the contextualization must also be underlined in the analysis of the shrinkage, because:

1. It is an essential part to understand the dynamics of the phenomenon
2. The project is contextualised in Denmark

The research design requires more than one case study due to the relevance for the comparison between two municipalities and the consideration in the concept of the shrinkage (contextualization). As it is explained later, the multi-causality of the phenomena depends basically in the socioeconomic and historical background of the city, therefore, an identification from two perspectives can clarify the answers and contrast the findings and consequently, it will be more credible (Yin 2002). Moreover as Flyvbjerg (2006) points out, the closeness of the case study to real-life situations and its multiple wealth of details are important in two aspects:

- First, it is Important for the development of a nuanced view of reality, including the view that human behaviour cannot be meaningfully understood as simply the rule governed acts found at the lowest levels of the learning process, and in much theory. In other words, the investigations through case studies provide real situations that normally is easier to understand because, sometimes and even there is too much theory to develop a phenomenon, it would never be an approach about the meaning of the investigation.
- Secondly, cases are important for researchers' own learning processes in developing the skills needed to do good research. If researchers wish to develop their own skills to a high level, then concrete, context-dependent experience is just as central for them as to professionals learning any other specific skills. In other words, the inquiries are also a base for new inquiries and in this process, the contextualization provide narrowed researches.

The investigation through the Danish municipalities what undergo shrinkage pointed Lolland and Bornholm because they are always leading the different dimensions analysed in the shrinkage. They are used as paradigmatic cases, because they highlight more general characteristics of the phenomenon in question (Flyvbjerg 2006). Moreover, the differences in between both municipalities considering their backgrounds played a decisive motivation for the election. Lolland's engine has been always an area where the agriculture has been main economic source meanwhile, Bornholm has been more diversified among agriculture, fishing and tourism. The different causality leads to diverse consequences and strategies.

Besides these issues, since the Danish structure reform, Bornholm has a singularity due to that it is region municipality what performs both regional and municipal tasks. Therefore, it is interesting to analyze the governance in comparison with Lolland what has only municipal tasks.

Even it is predicted similar results in case studies' dynamics and in the data collection of the investigation, the strategies to copy the decline it is expected to vary, due to the different contextualization of the places.

To conclude, the circumstance that I visit Bornholm with my family every year, makes me know the surroundings beforehand and it helps for my possible future help to that community.

### 3.4 Evaluation of sources applied to the research questions

In this section, it will be exposed the connections among the sources in which this thesis and the research questions have been supported. Even the readings have been more, in quantitative terms, it will be underlined the most relevant findings in order to have an overview of the researched data and their direct relation with the purpose of the investigation.

The structure of this subchapter will be performed through the justification of the research questions in order to study the variables of the different sources.

#### - **How can be addressed the shrinkage dynamics in the cities?**

The investigation of the shrinkage is carried out through the readings and own reflections from different authors in which it is developed the concept and the dynamics of the phenomenon. The complexity of the inquiry lies from the beginning in the own conception of the shrinkage because it can't be simplified with only decline of population as it can be study from Rink & Kabisch, Hospers, Haase and Hollander among others.

When addressing shrinkage, it is essential the understanding of their own dynamics and, to do so, Hasse introduces variables as spatial levels or the historic context of the place meanwhile Kuhn provides spatial polarization (movement of people, goods and capital to the center) connected to social implications (inequity). In order to frame the causes and try to find a common identity, the analysis is structured in dimensions (see table 2) based in Reckien & Martinez-Fernandez and Pallagst who schematize the drivers, causes and impacts of the decline but it is developed through examples and explanation of the challenges of the places in decline where Rink, Hospers or Bontje & Musterd provide additional data to cover the understanding every indicator.

Besides that, to complete the considerations of the dynamics, the consequences of the shrinkage are also introduced by Sousa & Pinho what suggest the decline of the administrative services in the place or, Herz and Haase who introduce the infrastructures' deterioration and the housing market relaxation, respectively. Moreover, following Hospers and Kuhn, the importance of the social capital and the image of the place are underlined as a basic element for growth. These aspects will be corroborated by the planner and the counselor in the interviews.

To conclude, the strategies for coping the shrinkage are studied through examples in different cities in EU from Martinez-Fernandez in which the investigation of cities where the decline is undergoing, is tried to be solved through the implementation of different policies. It is interesting also the explanation from Hospers

about the identification of the policies responses in the decline areas due to the political and historical context of the place and, this will serve to identify these reactions in the case studies.

- **How is this phenomenon affecting the municipalities in a Danish context?**

The phenomenon is, in this question, narrowed to Denmark and, therefore the structure of the analysis is the same as in the previous one. Jensen and Ritzau (in various articles from Danish newspapers) verify the decline in the peripheral areas and Johansen study the causality of the shrinkage, what it is supplied with an inform made by the European Urban Knowledge Network.

The contextualization made in order to clarify the demographic trends, follow the inform performed by Realdania (Yderområder på forkant) with crossed information from newspapers articles, as Boserup, the Danish Ministry of Food, Agriculture and Fishery and Winther & Svendsen who introduce the spatial polarization (rotten banana) in the country.

Statistics performed through Danmarks Statistik and Nogetal provide quantifiable information about the dimensions of the decline to be able to compare them with rest of the country or between the case studies.

To conclude, the challenges of the municipalities and how is the performance of the policies to tackle the decay are schematized depending on the source:

- International, national, regional and local level: EU funds, Danish Ministries and Danske Regioner are the main sources
- Partnerships for common cooperation: Realdania and Dansk Kyst- og Naturturisme

- **How do planners react to counter shrinkage in Denmark?**

From one side, the strategic and development plans from the municipalities provide the information about the visions for growth. The documents could be downloaded from the website from the municipality and be analyzed. The reports from the networks, partnerships and firms like Realdania, represent the focuses of the municipalities in targeted campaigns by offering the scope and the potential in every sector.

On the other hand, the interviews could validate the quantitative data and provide qualitative information necessary for the development of the investigation.

- **Why is it relevant the contribution for boosting those cities where the decline is undergoing?**

The data provided by Realdania reports and newspapers articles establish different variables into this approach. Erhvervstyrelsen prepare also initiatives in a national level for the attraction of business in

peripheral areas. Thus, the relation in between the searching of the strategies to tackle the shrinkage are connected with the relevance of boosting the municipality.

## 4. THEORETICAL REVIEW

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This chapter embraces the conceptualization and the characterization of the shrinkage phenomenon. To achieve this, the analysis of the related terminology, causes and consequences of this circumstance, will shape a framework to understand it. Thus, the comprehension of the investigation through existing policies and governances that describe how the countries face this decline will serve as approach for the consequent analysis in a Danish context. This theoretical structure used will help in the research design and will serve also for generalizing the results of the case study (Yin 2002) and it will be observed as an explanation of the observed regularities of the phenomenon (Bryman, Social research methods 2012 )

### 4.1 The conception of shrinkage

At first glance, shrinkage as urban multidimensional phenomena can be understood, as population decline in an area during time. In recent years, social science researches refine those areas into cities but, not only with a demographic change but also with economic transformation or even suburbanization (Andersen, 2005). Furthermore, the concept is also studied focused in the collection of symptoms (Rink & Kabisch, 2009) that the city is undergoing as for example the implications of the ageing of society as a feature.

As Hospers (2014) summarizes, since the international Shrinking Cities Project (2004) many researchers try to frame the shrinkage through different terminology as for example “vanishing cities” (Pascal, 1987), “urban decline” (Beauregard, 1993; Friedrichs, 1993; Couch et al., 2005), “post-industrial cities” (Hall, 1997), “a new phase of urban development” (Cheshire, 1995), “urban transformation” (Buzar et al., 2005; Holst Laursen, 2008), “demographic decline” (Verwest, 2011) and “demographic change” (Brennan et al., 2005; Steinfuhrer & Haase, 2007; Martinez-Fernandez et al., 2012). An affinity could be also the Sousa and Pinho’s (2015) approach within the term “forgotten city” proposed in first instance by Hoyt and Leroux (2007) as cities whose citizens once supplied the world with clothing, machinery, and material luxuries.

In that Shrinking Cities Project (2004) mentioned before, another definition in form as a quantitative analysis is given, and describe it as the consideration of a city as affected by shrinkage when the amount of population decline are considered to be significant if they amount to a total of at least 10% or more than 1% annually; and apply to the administrative municipal districts, even if these lie within growing agglomerations.

Haase, et al. (2016) conceptualized urban shrinkage as an empirical phenomenon resulting from the interplay of changing drivers of shrinkage at different spatial levels (from regional to global) that produces a decline in population at the local scale (Figure 4). The dynamic process in the concept is added when it is



taken into account also the historic context of the place what can determine the urban development that the city implements to counter (or not) the shrinkage. Therefore, the political tendencies in every scale (local, regional, national and European) and the conflicts about public and private interests will interfere and frame the urban development.

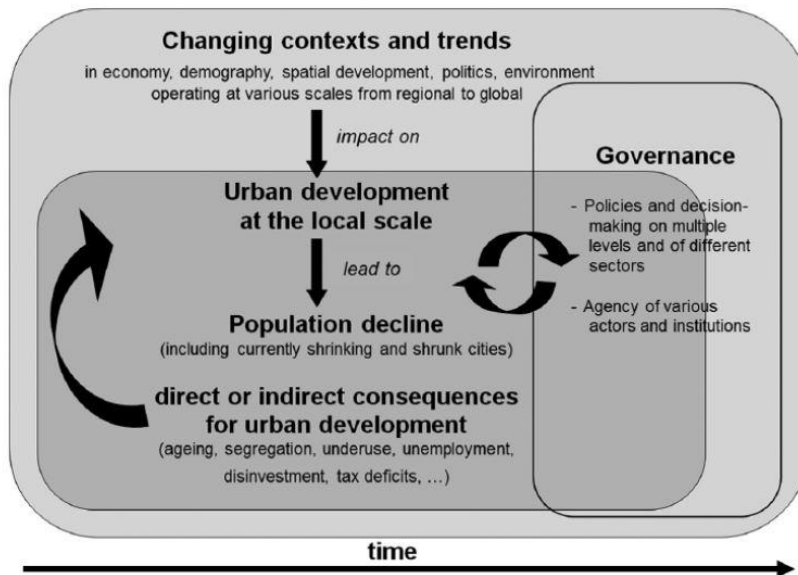


Figure 4: A conceptual model of urban shrinkage. Source: Haase, et al., 2016; p. 90

From another point of view, the dynamism of the concept can be introduced through spatial polarization (Kuhn, 2015) where movement of people, goods and capital to the center (metropolitan areas) are reinforced meanwhile rural or old industrial areas experience decline. This phenomenon is connected with peripheralization and marginalization where social relations have social implications what could lead to inequities in the society.

The Shrinking Cities International Research Network<sup>6</sup> (SCiRN), offers a flexible definition (Bontje & Musterd, 2012) where, on one hand it can provide diverse settings across the globe as this network does and, on the other hand, it could be difficult to apply it in empirical research based on quantitative data or to make a proper case study selection that enables inter-regional and international case comparison. The definition (Wiechmann, 2006) is as it follows: “densely populated urban area with a minimum population of 10,000 residents that has faced population losses in large parts for more than two years and is undergoing economic transformations with some symptoms of a structural crisis”.

<sup>6</sup> The Shrinking Cities International Research Network (SCiRN<sup>TM</sup>) is a research consortium of 30 scholars and experts from 14 different countries pursuing research on shrinking cities in a global context. It was founded 2004 under the aegis of the Institute of Urban and Regional Development at the University of California, Berkely (Network, n.d.)

## 4.2 Causes of shrinkage

The casualization of the phenomenon (complex and partly overlapping (Hollander, et al., 2009)) has been analysed by many researchers and, in this section, it will be exposed the main characteristics elements what describe them in European context. Explanations from different authors will be discovered in order to offer a complete overview of the shrinkage *identity*.

### 4.2.1 Economic transformation

It is the first cause in the EU (Hospers, 2014). The development of the European countries is oriented towards a new kind of the labour, where services and market liberalization increase meanwhile the industrialization is decaying (Reckien & Martinez-Fernandez, 2011). This de-industrialization<sup>7</sup> is associated to globalization and the rise of low cost countries.

Industrialization was connected to urbanization in such a way that, the development of the cities is allied to the mode of production. Unlike, de-industrialization is linked to dis-urbanization (excluding the metropolises) and the process of economic decentralization. These circumstances began in Europe in the early 70's (Clapson, 2003) and with the global economic crisis in 2008 the number of distressed regions grew rapidly across the globe, giving the topic of shrinking cities a new life (Reckien & Martinez-Fernandez, 2011). The allocation of large, mono structural enterprises in the cities<sup>8</sup>, lead to dependence what produces a parallel development between workforce and population fluctuation (Reckien & Martinez-Fernandez, 2011). Thus, the strategies of the firm will be noticed in the agenda of the urban management plans and will have power in the decision-making. Hence, when the firms have no longer interest in staying in the city, a job loss occurs and the environmental and unused infrastructure legacy is what stays. Consequently, lack of economic opportunities prompts especially well-educated young people to move out and find employment in economic centres (Hospers, 2014).

As an example of shrinkage derived from deindustrialization was Liverpool which began with population loos in the beginning of the 30's and it has been in recession until 2008, when it could be seen the first symptoms of growth (Rink, Haase, et al. 2010).

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<sup>7</sup> De-industrialization involves a decrease in the relative importance of industry and manufacturing in the economy. It usually involves a decrease in the absolute size of industry or it might just mean that manufacturing industry takes a smaller share of GDP and employs a smaller % of the workforce.

De-industrialization will invariably involve an increase in the importance of the service sector to take the place of industry. (Pettinger, 2012)

<sup>8</sup> 'Single layered cities', including cities and regions heavily specialized in labor-intensive manufacturing or mining industries (Bontje & Musterd, 2012)

#### 4.2.2 Spatial changes

On one side, the centralization process of the economic activity concentrated in large regions damages the towns surrounded due to the migration of the people (also called “rural shrinkage” (Pallagst, 2013)) to these areas and consequently, they also lose investment. On the other side, within the cities people move to the suburbs (suburbanization) and commute every day for work (Hospers, 2014).

Having the spatial transformation in the centre of the cause, the dynamic process, in both senses mentioned before, is characterized by Reckien & Martinez-Fernandez (2011) as spatial mismatches who underline the hollowing-out (“doughnut effect”)<sup>9</sup> aspects: suburbanization or urban sprawl. This intra-regional migration phenomenon is promoted by serious inner city problems (streets are insufficiently populated, fear prevails and crime becomes a great worry for the population; poorer, run-down neighbourhoods have a higher reputation for crime and disorder than more affluent ones (Power, 2001)), which increases the wish to move but with a strong mental connection to the region. Moreover, moving to suburbs or rural areas is reinforced by the wish of the people of green surroundings and the rural way of living (Nørgaard & Andersen, 2012).

The development of these “small” concentration centres and good infrastructures is basic in the suburbanization process (Martinez-Fernandez, et al., 2012) where a parallelism between the general decentralization tendencies in economy and society exists. In this case, suburbanization occurs more frequently at the local rather than the regional scale but, in regions lacking residential environments that meet typical suburban demands (e.g. spacious houses and plots in quiet, green settings), such as heavily industrialized regions, suburbanization may cross the regional boundaries and contribute to population loss on a city-regional scale (Bontje & Musterd, 2012). Anyhow, there is an evident mismatch between supply and demand in the housing market.

An important spatial reorganization because of the urban sprawl can be underlined in Slovenian cities where suburbanization and low settlement densities led to negative effects on efficient land exploitation, environment and economy (Martinez-Fernandez, et al. 2012).

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<sup>9</sup> Concentration of urban activity on the ring road (where the newest and most advanced generation of housing estates and office parks are located) and the parallel physical disappearance of all that remains inside (the interior is affected by an accelerated process of obsolescence that leads to the demolition of a multitude of buildings). (Andalusia center for contemporary art, 2010)

### 4.2.3 Demographic change

The demographic future in Europe is being determinate by the fall of births (Hospers, 2014) and its cumulative process due to the impossibility of the children who have not born give children themselves. This argument leads to ageing population and therefore, to a change in distribution of social resources and to a consumption shift toward sometimes costly health care services (Rink & Kabisch, 2009). Nowadays, EU and Japan are leading this demographic transformation.

In this section, it is possible to add more causality detailed before (suburbanization and deindustrialization) and therefore, assume the multi-causality of the shrinkage.

Genoa and Timisoara are examples of population loss due to the demographic ageing and suburbanization. In both cases, an extremely low birth rate led to death surpluses and, at the same time, to population decline and rapid ageing of the population (Rink, Haase, et al. 2010).

### 4.2.4 Political transformation

The political transformation as a cause for shrinkage was effected in the Central and East European countries due to the transition from socialism to democracy. This changes didn't affect only to political but also to financial aspects what led to a market economy.

Thus, local governances have been replaced by "new urban politics" focused on local economic development and local competitiveness where neoliberal agendas have been taken place.

Within the shift, the migration of young people to west countries provoked a population loss in those areas (Hospers, 2014) as result of the high unemployment.

Bytom and Halle are examples of shrinkage due to the post socialistic change as main indicator. Both cities were old industrial hubs in Poland and the former German Democratic Republic, and within the political development, jobs began to disappear and so, their inhabitants (Rink, Haase, et al. 2010)

### 4.2.5 Other causes

There are more reasons what foment shrinkage in the areas. As it is commented before, the multi-causality (and overlapping) of the phenomenon, the complexity of the term and the variables arise by the contextually of the place, have originated more understanding to researchers to add more causes (Reckien & Martinez-Fernandez, 2011):

- Climate change
- Environmental disasters: accidents in nuclear reactors, ships full of oil, etc.
- Conflicts and/or wars: nowadays, the Syrian conflict is testing the EU policies concerning the political asylum with “*improvable decisions*”<sup>10</sup>
- Epidemics and/hunger
- Instituted behavior: cause and effect of shrinkage in which population is loyal to the place and prefers to move to suburbs than other regions.

### 4.3 Consequences of shrinkage

In order to identify the consequences of shrinkage, it is important to underline its essential role on this research due to the subsequent investigation within the governance and planning. Hence, it would be easier to understand the methods (applied or theoretical) for countering the shrinkage what will be evaluated later in this project.

Concerning the multi-causality of the shrinkage and its “cumulative causation” (Myrdal, 1957), there is a parallelism about the multiple consequences of the phenomenon due to different drivers that an area could be affected and the context surrounded and the local particularities. Therefore, this estimation can confirm the complexity to establish a common number of consequences for every case.

However, the need to find a “shrinkage identity” (Reckien & Martinez-Fernandez, 2011) in which it is valid an approach where “one-size-fits-all” (Haase, et al., 2016) could provide a theoretical path conducive to structure and, consequently the analysis of the consequences.

The first symptom in the area affected by shrinkage is the decline of population density and reasonably also, a series of expected losses, including the loss of services, the loss of spending power, the loss of tax and other municipal sources of income, the loss of labour force, and the loss of investments (Bontje & Musterd, 2012).

To understand how an area is affected, the next structuration is made to cover the consequences:

#### 4.3.1 Physical infrastructure and the local economy

This refers to the “hardware” of the cities (Hospers, 2014), the visible, tangible and countable. The housing market suffers, in first place, a decline in the market, what affects the sustainability of the neighbourhoods

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<sup>10</sup> Authors quote

and the services that support them (Sousa & Pinho, 2015). Moreover, schools, kindergartens and shopping centres have to close and firms decide to locate their businesses elsewhere. As consequence, the habitants who stay must face an unreasonable cost increase for drinking water supply, sewage disposal, electricity, district heating, and other services (interaction between supply and demand what provoke diminishing tax revenues for municipalities )

Nonetheless, even the infrastructures could become oversized and a few of them obsolete, most of them will still be necessary in the context of the distribution network (Herz, 2006). Besides that, Haase, et al (2016) confirm in their investigation that the historical housing policies are not a problem in the shrinking cities. This market relaxation can be considered as a relief in those places because housing and urban infrastructure in general were a low priority for the central planners under state socialism and housing shortages were notorious in the system.

#### 4.3.2 Social capital

The sense of social capital could be adopted by Hanifang (1916) what, in context of community participation in a school, appeals to the positive relationship:

*“Those tangible substances [that] count for most in the daily lives of people: namely good will, fellowship, sympathy, and social intercourse among the individuals and families who make up a social unit... If [an individual comes] into contact with his neighbour, and they with other neighbours, there will be an accumulation of social capital, which may immediately satisfy his social needs and which may bear a social potentiality sufficient to the substantial improvement of living conditions in the whole community.”*

As Hospers (2014) points out, it can be considered the “software” of the place, where the network of people, their interactions, norms and values are included.

The socio-demographic structure of the shrinking city changes due to the migration of young people creating a problem of ageing society. It happens a selective migration (Strohmeier, 2004) where, not only old people stay, but also immigrants and poor people what could lead to social problems and inequities.

The problems what can be developed in these areas towards unemployment and a decrease of labour markets because skilled labour, an important location factor, becomes scarce in these territories (Sousa & Pinho, 2015). Some authors also underline the development of crime.

From another point of view, it exists the new enclosure movement in post-modern cities (Martinez-Fernandez, et al., 2012) where privatization of space is carried out by people what can allow to live in pleasant suburbs and they prefer to commute and live in a place with a strong mental connection to the region.

### 4.3.3 Image of the place

It points out the “mindware” of the city (Hospers, 2014) due the negative reputation of the shrinkage to the exterior. This issue affects to the inhabitants what could feel “left behind” in the outskirts of the city.

The peripheralization approach (Kuhn, 2015) and its dynamism, due to its relation with centralization, considers notions of marginality including economic polarization, social inequality and political power.

## 4.4 Approaches and strategies for coping shrinkage

Concerning the focus in the dynamics of the shrinkage, it is essential a good understanding of the policies and strategies what cities have tried to implement in order to coping with shrinkage. Always in the EU context, this section will frame in a theoretical manner, how could be faced this phenomenon.

To reinvent a place with shrinkage symptoms could be seen through many perspectives:

- **Culture and creativity**

Cultural development can attract and retain the creative population segment (Aber, 2006). The implementation of these kinds of policies can be seen in many places (Hospers, 2014) where they try to attract students (regions in Eastern Germany) by reduction of fees, tax reliefs and direct loans for high-tech firms (Sosnowiec, Poland), investing in flagship projects (the Oscar Niemeyer International Cultural Center and a knowledge park in Aviles, Spain), and development of a Geopark in Odsherred (Denmark) (Odsherred Kommune, 2013).

Another interesting example is Heerlen (Netherlands) where it was organized “Design for Emptiness” (OECD, 2011). This strategy consisted in the involvement of creative professionals in the issues of vacancy where it was proved that the establishment of a creative people’s climate as a stimulus for a better social and economic future is a core part of the city’s urban strategy.

- **Community involvement**

The social capital of the place and its involvement in the community can help to stabilize depress urban areas and avoid inequities as Sucato (2006) underlines in his conference. A new generation of researches is focusing on the social problems in the cities to promote cohesion related to growth (Hollander, et al., 2009).

Within the social dynamics of demographic change for local development, the involvement of people in the community will enforce individual decisions to stay in the place. Moreover, social cohesion can contribute to teach each other how society works in order to improve their own lives (OECD, 2011). Involving people in

the decision-making can create strategies where families are directed in focus by the development of a child-friendly environment to motivate them to stay (Hospers, 2014) so, social capital is fortified.

- **Attract financial activities**

From market oriented visions, the attraction of investments is a difficult task for shrinking cities (Sousa & Pinho, 2015) for the difficulties of expectations of earning money in those areas. As commented before, policies could adapt the situation by declining tax revenues and therefore the market can be reinforced. These kinds of strategies, more growth oriented, are based in the physical environment, transport and education.

The improvement of the local economy (OECD, 2011) demands policies where the development of business/industry clusters, marketing, skills and employment programs are strengthened. Furthermore, they should be focused in new growth areas such as the green and silver economies<sup>11</sup>.

#### 4.4.1 Facing shrinkage

Countries in EU, react in different ways when they are affected by shrinkage and policies varies depending also the political context in the area. Hospers (2014) identify four types of policy responses:

- **Trivializing Urban Shrinkage:** the local government does not take symptoms of shrinkage seriously and consequently does not take any action.
- **Countering Urban Shrinkage:** includes all policy measures aimed at fostering urban growth, including building new residential areas and landmarks as well as place marketing.
- **Accepting Urban Shrinkage:** accepting urban shrinkage can be described as adapting the content of policies to mitigate the negative effects of shrinkage (how to retain residents)
- **Utilizing Urban Shrinkage:** It starts from a positive view on shrinking cities and suggests to take advantage of it (societal laboratories for testing new solutions that are also useful for other places)

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<sup>11</sup> The silver economy is a new and growing market and demand which will require new and innovative product and service development, it is already greater than the size of the green market and will grow up to 5% p/a, both across the EU and globally. Instead of seeing the longevity and ageing of our societies as a tsunami of problems and costs, those that instead see the opportunities to plan for, provide and meet this rising demand will find themselves as richly rewarded. Those economies and societies which appreciate and implement age diversity in employment and across society will see the benefits for all ages (Walsh, s.f.)



## 4.5 Analytical framework for the shrinkage conceptualization

Once it is clarified the conceptualization, causes and consequences of the shrinkage, the analytical framework will be develop in order to structure and organize the ideas exposed above. Moreover, a Danish approach of the phenomena will be introduced to frame and context the project.

Urban shrinkage is a multifaceted phenomenon what is affecting EU countries and, nowadays there are many theorists and researchers trying to address this decline by collecting studies from places what have suffered or are suffering this decline. The causes of the shrinkage differ among the cities studied by theorists, but the differences are more stressed when they interact with each other.

The difficulty of finding a common shrinkage identity is noticeable due to the context of the places, what plays an important role by cause of, not only for the political decision-making framework, but also the reaction of the inhabitants.

After observing the Fig. 1 showed before, the multi-scalar effects that are involved in the decline process, challenge the understanding of the concept because, the consequences of the proceedings and decisions taken in a global scale, determine the economic, cultural and demographic structures in the lower levels. The causes of the shrinkage differ among the cities studied by theorists, but the differences are more stressed when they interact with each other.

However, the causality could be framed in the dimensions mentioned below to reach an understanding of the most common factors that the cities affected with shrinkage have suffered:

Dimensions	Challenges	Strategies
Economic transformation	De-industrialization Unemployment Uneven tax distribution Dependency on primary industries Investment loss	Attract investors Cooperation and networking Local economy Tourism
Spatial Changes	Suburbanization Land use changes	Sustainable buildings Improve infrastructures
Demographic changes	Aging of population Out-migration of young people Inequity	Active ageing policies Education
Political transformation	Centralization vs decentraliz.	Accepting shrinkage

	Neoliberal agendas National dependency	Local governance
Others:	War Hunger Instituted behaviour	Civic engagement Welcoming refugees Activities and culture

**Table 2: Resume of the dimensions, challenges and strategies of the shrinkage. Author's work.**

The next step to understand the shrinkage dynamics is the analysis of the resultant consequences what the city is facing and how is the reaction of its population. Depending on the contextual idiosyncrasy of the place (political, historical, economic...) the counter steps carried out will be different.

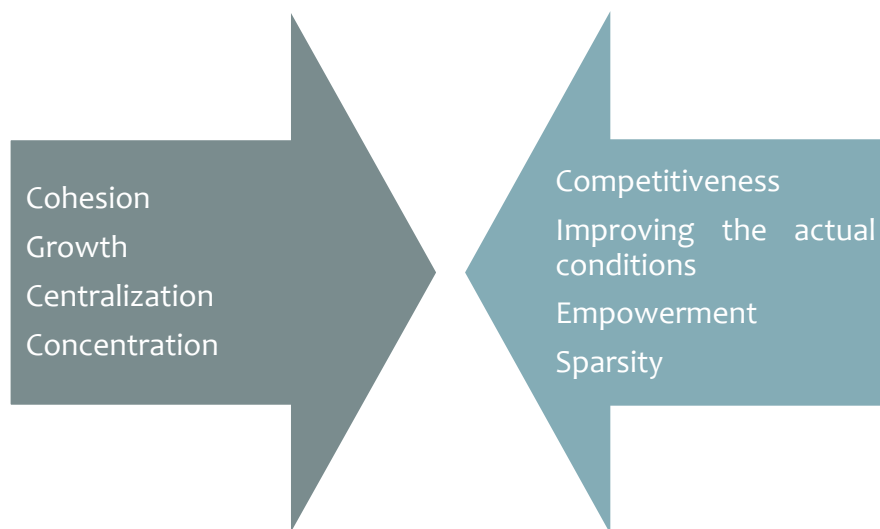
Thereby, and as examples, the decision-making in a shrinkage period has been:

- Attract investors: Even in monofunctional places where one industry monopolizes the economy of a place and after some years it is not profitable, local and/or regional governments pretend reinforce the economy by creation of funds (from EU) for supporting the entrepreneurship in the area. Therefore, it is important the diversification of the local economy.
- Networking strategies in the improvement of accessibility: roads, rail trains, cycles...
- Find aspects in the place what makes them unique: harbor, flora and fauna, gastronomy...to boost the image of the place through the cultural heritage
- Housing policies: rehabilitation of buildings to revitalize city-centers by new urban restructuring programs. On the other hand, the idea of "smart thinking" where the adaptation of the places by laying down the buildings due to the oversize of the place.
- Collaboration with nearby cities to strengthen inter-urban dynamics
- Environmental improvements: green areas in the city, less pollution, sustainable traffic systems...
- Redesign of public spaces and maintain social housing to avoid the displacement of low-income population and promote cohesion.
- Promotion of sustainable buildings by targeting the climate change through national funds.
- Active ageing policies: adapt workers for the needs of older workers or guide old people to new technologies.
- Promotion of social-cultural activities for a better quality of life and economic prosperity.

These are some of the actions that can counter the shrinkage in a city but, it is important to underline the political reactions to that. After the analysis done by Hospers (2014), it is surprising the point of view where the government denies the shrinkage and it prefers to do nothing about.

From a positive point of view, shrinkage could be seen as a transformation of the place where a new design has to be impulse. Thus, it can be seen as an opportunity for the development (Reckien & Martinez-Fernandez, 2011).

In conclusion, the dynamics of the shrinkage lead to evaluate shrinkage as a complex issue in which the multi-causality approach is well defined. The economy, demography, spatial mismatches, political agendas, as main reasons for the decline of the area, have to be analysed under a particular historical context and through the governance applied in every level and its reactions to them. Moreover, for addressing solutions to the shrinkage (Hospers, 2014), there are dilemmas among the stakeholders which can work in some places but not in others.



**Figure 3: Planners dilemmas for dealing shrinkage. Author's work based in Hospers, 2014**

## 5. SHRINKAGE IN A DANISH CONTEXT

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The clarification and characterization of the concept explained above helps to understand its complexity and, in this chapter, the Danish approach will be introduced in order to address other problematizations of the project. It will also offer a connection with the empirical analysis that will be exposed in the next chapters.

The shrinking city phenomenon is not presently visible in Denmark (EUKN National Focal Point Denmark, 2010). Although many Danish cities have been affected by industrial decline, the impact has been narrowed by other businesses within the service sector. However, the decline of population has been associated with a decline of jobs in the primary sector i.e. fishing and agriculture in the periphery.

The peripheral areas in Denmark are all characterized by decline (Jensen, 2006), and there are a number of factors that can be compared in the country: population, number of adolescents and young population, level of education, proportion of employees in the new commercial growth areas, public service institutions and home prices. These considerations give access to common elements to analyse and contrast among towns what suffer the decline of population and consequently, resources. In economic terms, every time a municipality loses a resident, it costs as a rule of thumb 50,000 kr. In grants from the state (Ritzau, 2015)

Johansen (2014) points out the most important causes for shrinkage in Denmark:

- Centralization: Once young people finish the graduation, will never come back to the place they grew up.
- Mental connection lost: The sense of belonging to a place is replaced when people move. Close to Danish towns, it is easy to find nature areas what can fulfill the demands of those people who move.
- Social capital: change of the quality of villages due to the lost sense of community.
- Spatial transformation: change of land use of villages to intensive and uniform farming monoculture cultivation. Other impact is the number of buildings what need to be demolished due to the decline of population and consequently, abandoned houses.

Although, shrinkage phenomenon in Denmark can be perceived in the periphery and rural areas, the population in big cities as Copenhagen, Aarhus, Aalborg and Odense are growing, where in the last 50 years the proportion of people living in cities has risen from 50 % to approx. 85 % and the city area has triple in the same time period. (EUKN National Focal Point Denmark, 2010).

This effect can be seen as result of the settlement and/or enlargement of the service sector in big cities. More specifically, the urban development in the Copenhagen region has played an important role for its own growth and this plan (“Finger plan”) has been focus in (Jørgensen, n.d.):

- Urbanization will develop in slender fingers.
- Green wedges of undeveloped land will remain between fingers: keeping a natural environment
- Finger development will follow public transport (esp. railways): replacing spaces for cars with spaces for people to walk, bike and recreate as an instrument for the creation of pedestrian landscapes in the city center while effectively moving people and goods throughout the region
- Suburbs will develop like “pearls on a string”.
- Inhabitants will live in close proximity to green spaces.

On the other hand, the periphery of Denmark suffers the decline of urban growth. In Eastern Jutland, the urban development has “sprawling tendencies” (EUKN National Focal Point Denmark, 2010) even, in principle, the urban policies principles aimed to (Østergård, 2009):

- Urban quality, density and reduced need for urban expansion.
- Designated sites in Municipal Plan Reuse of brown field sites.
- Specific public/private regeneration partnership.
- Possibility for a future landowner-association.
- New development - mix of urban functions
- Boost the infrastructures to connect resources



Figure 5: Image of the place in peripheral areas. Source: Vullumsen, 2015

This spatial polarization observed in Denmark between the primary and secondary economic sectors affects directly to the decline of the rural areas where there are less job opportunities because, agriculture, fishing and small/medium industries demand it. These territorial parts are called the H-city and the rotten banana<sup>12</sup> where the east part of the country is urbanized (and growing) and the western part has a rural character experiencing the decline.

In the following part, the Danish demographic characteristics are explained in order to frame the empirical evidences and for including an overview of the main relevant aspects.

## 5.1 Population size

Population growth is particularly concentrated surrounding municipalities with the largest cities. The Danish population from 2006 to 2016 have increased by 4.78 per cent. Population growth has not been evenly spread over the municipalities (Yderområder på forkant, 2015). Growth has been especially high in the Central Jutland, in the metropolitan area (Copenhagen) and around Aalborg. At the same time most of the island municipalities and municipalities in southwest and northwest Jutland marked by significant decline in population. Population decline is affecting large parts of the country municipalities and as commented, those municipalities with positive development act as settlement magnets (Lolland Kommune 2015).

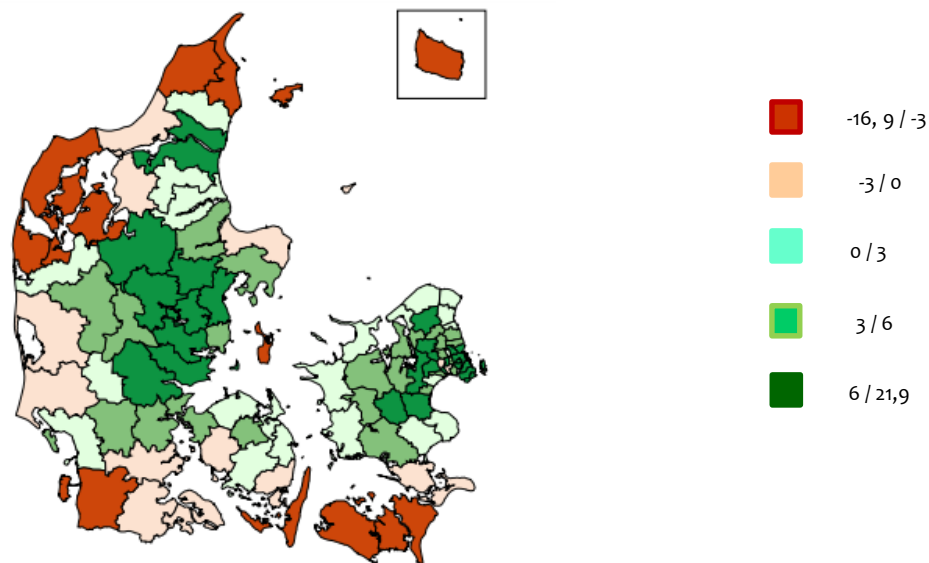


Figure 3: Population development in Denmark from 2006-2015. Source: *Danmarks Statistik*

<sup>12</sup> The Rotten Banana denotes peripheral Denmark, which takes a geographically curved form that resembles a banana, and it symbolises the belief that rural areas are backward and (too) costly. (Winther og Svendsen 2012)

## 5.2 Rural and urban areas

Most municipalities possess areas with different degree of urbanization. Some areas are characterized by a high degree of urbanization, while in others prevail rural areas. Municipalities' degree of urbanization can be measured in (Yderområder på forkant, 2015):

- Rural / urban dimension: by measuring an area's share of citizens in cities with at least 3,000 inhabitants.
- Centre / circumferential dimension: by measuring an area is located near or far from the largest cities in Denmark (less than 30 minute drive). This dimension represents areas which are characterized by low degree of urbanization. They are the ones that are challenging.

In Denmark, 14.2 % of the population lives in rural areas further away from the largest cities (Yderområder på forkant, 2015). The most urbanized municipalities do not have these considerations of land type, while the smallest municipalities - Æro, Læsø and Samsø Municipalities – have exclusively rural areas and they are also far away from the big cities. The fact that the urban areas of the islands have less than 3000 inhabitants make them called rural. These areas, can be called also, peripheral because they are the most affected by the decline of population.

The movement of population from rural areas to the cities can be seen also in two aspects with the centralization as principal form (BL – Danmarks Almene Boliger, 2015):

- National urbanization (Capitals centralization): From citizens who move from rural areas far away from the big cities. These are municipalities in the North West of Jutland, Langeland, Lolland, Guldborgsund and Bornholm.
- Intra-municipal (Regional centralization): From neighbour municipalities to the big cities. This applies in particular to Copenhagen (and surroundings), Århus, Odense, Randers, Horsens and Kolding. In 25 years, the population in medium-big size has increased more than the double than in Denmark as the whole (Ritzau, 2014)

## 5.3 Population age

The Danish population is getting older (Ritzau, 2014). The average age has increased by almost six year since the early 1970s when it was 35,5 years compared to 41 years today. This is due to partly because fewer children are born, and that population lives longer.

The population age can also be measured by the health of the population where the expectancy of mortality is 79,4 years. However, it changes depending on the municipality:

- Low life expectancy: Western and South Sealand, Lolland-Falster, Copenhagen and Ishøj Municipality.
- High life expectancy: Rudersdal

It is underlined in the following facts, the location of the lowest proportion of children born and the highest proportions of old people because it can be observed again the municipalities where decline of population is undergoing (Yderområder på forkant, 2015):

- The lowest proportion of children (0-14 years): Læsø, Samsø, Langeland and Æro and Lolland Municipality. The largest shares found in the surroundings of the biggest cities.
- The highest proportions of older people (65+): Læsø, Æro, Samsø, Langeland and Fano with shares between 34,9% and 28,2%. Lolland is the municipality with the fifth smallest proportion of children, the seventh largest proportion of elderly.

## 5.4 Other demographic trends

### Migrants and descendants<sup>13</sup>

The proportion of immigrants and descendants in the Danish population has been increasing for several decades (Yderområder på forkant, 2015). The proportion of immigrants and descendants as a joined group was in 1980 at 3.0%, and in 2014 it had grown to 11.1 %.

Moreover, there has been a positive development thanks to migrants in municipalities as Viborg, Thisted, Lemvig, Struer, Morso, Skive and Ringkøbing-Skjern where the population has been rising in an unexpected way. Thus, local authorities confirm that they will need more migrants in the future (Ritzau, 2015).

For immigrants and descendants the urban attractiveness is most pronounced for Copenhagen suburban municipalities - Ishøj and High-Taastrup Municipality - which has both urban and rural areas - as well as for Fredensborg Municipality and a serie of municipalities with a large capital. This embraces primarily to Ringsted, Slagelse and Odense municipalities.

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<sup>13</sup> Immigrants are persons resident in Denmark and born abroad, where none of the parents Danish citizens. Descendants are the children of immigrants.





Figure 6: Symbol for cooperation with immigrants. Source: *Denoffentlige.dk*

### Family Structure

Even this topic is not directly related with the decline, it is interesting to observe this characteristic what differences urban and rural/peripheral areas. However, it has an effect, for example, in the urban planning regarding the necessity of types of housing.

People live together in diverse family forms. For example, single adult population is 1.6 million what it is equivalent to 37 %. This number covers over both adults who live alone, and single parents with dependent children.



Figure 7: Single person. Source: <http://www.collegehumor.com/>

The highest proportion is found in the largest cities and in island municipalities Samsø, Læsø, Æro, Lolland and Guldborgsund (in most municipalities there are relatively more single people in cities than on the country side) (Yderområder på forkant, 2015).

### Education

The proportion of education in Denmark with more than basic education among the 30-59 year old is 76.6 %. The highest proportions are found mainly in large parts of the Copenhagen area and around Aarhus and Aalborg. The lowest percentages are especially in a number of municipalities in high extent from rural areas.

Other important facts are that in municipalities with larger cities, there are a relatively large number of academic people meanwhile in areas further away from the largest cities, population are typically with low professional education.

### Employment

The importance of the employment should be underlined due to the significant impact that the municipal income tax has over the economy, as well as for the cost of benefits. The more citizens employed the higher tax other things being equal, and the fewer people will receive public assistance (Yderområder på forkant, 2015).

The employment rate in areas Rural is higher than in urban areas. For rural areas, it is 75.3 %, while for urban areas is 70.9 %. It is a general tendency for most municipalities that there are relatively more people employed in rural than in urban areas. On the other hand, there is a tendency in municipalities like Lolland, Langeland, Aero, Odsherred and Bornholm where it is possible to find 15% of permanent unemployment.

Only in seven municipalities, the employment rate is lower in rural areas than in urban areas Jammerbugt, Rebild, Bornholm, Frederikssund, Egedal, Allerød and Solrød.

Another important factor is commuting for work. The proportion of employees who commute out of their place of residence to their job varies widely municipalities. This applies especially for municipalities around Copenhagen, Århus, Ålborg and Odense. Part of the explanation, it can be found in the particular areas where have populations are better educated than average, and thus are more likely to commute and also have preferences for urban life. In addition, the infrastructure - both in relation to road network as the public transport play a significant role.

Conversely, areas with a geographically isolated location are highly dependent of the opportunities offered locally. Especially island municipalities Læsø, Samsø, Åero and Bornholm are by nature - non-bridged islands – geographically in isolation from the other parts of the country (Yderområder på forkant, 2015).

### Incomes

The income measures are also an important part when it is studied a place due to it permits to assess the capacity of the area and consequently the size.

The incomes are higher in the municipalities' surroundings the big cities and in rural markets and smaller in the islands from South, Svendborg, Tønder, Vordingborg and Bornholm. The most urban areas have low income due to the housing areas with many residents who normally have low budget but, the opposite also occur. For example, in Sølrød municipality, the urban area along the beach has many villas construction

typically inhabited by wealthy citizens, while rural areas are inland and typically inhabited by citizens with lower incomes than those in the municipality urban areas. (Yderområder på forkant, 2015).

## 5.5 The Danish periphery

As commented before, the shrinkage phenomenon in Denmark shows up in the periphery and, consequently the decline of population and jobs in those areas. This depopulation is the biggest challenge that Denmark has to confront (Boserup, 2013) due to the consequences that it entails that are not only economic, but also in their resources.

In the next figure, it can be observed the population decline in the 16 peripheral municipalities (according to Danish Ministry of Food, Agriculture and Fishery).

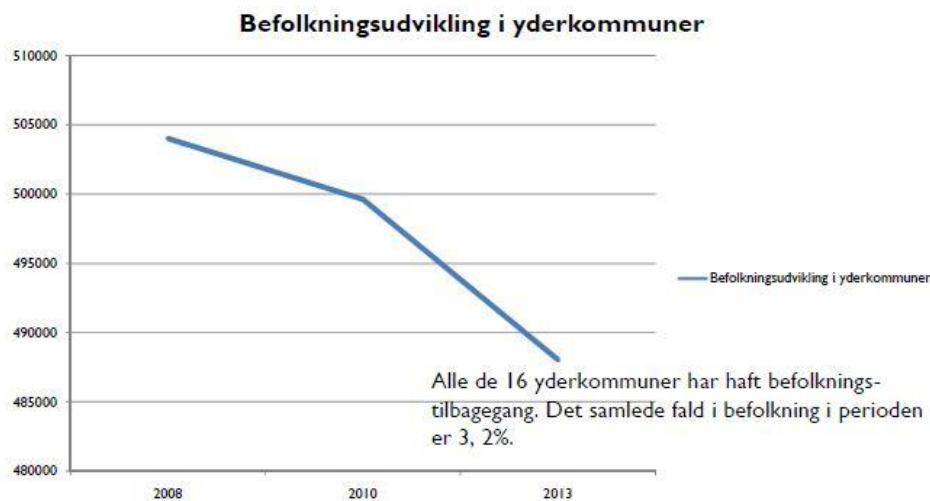


Figure 8: Population development in the Danish periphery. Source: Johansen, 2014: p.9

First of all, it is essential to define what it is define as periphery in Denmark:

- The concepts of rural and peripheral areas are overlapping and it describes areas outside the cities (udkant, yderområde og landdistrikt).
- A municipality is designated as a peripheral if it meets at least one of the following criteria:
  - o "Covered by the differential Planning Act"
  - o "Categorized providing municipal relation. Distribution of rural development funds of the Ministry of Food".

- "Categorized as peripheral areas and transitional areas compared. EU structural funds" (Realdania, 2012)<sup>14</sup>



**Figure 9: Typologies of Danish land districts. Peripheral areas. Source: Realdania, 2012; p.8**

- In connection with the distribution of EU structural funds 2007-2013, peripheral municipalities are those that meet both of the following criteria (UHI, Danske Regioner, 2010):
  - Low business income. The municipality's earned income per capita. Income is below 90 per cent. the national average (average for 2001-2003)
  - Weak population trends. The municipality has experienced a decline in population or below half as strong growth as the national average in 2000-2005

<sup>14</sup> Aabenraa, Assens, Billund, Bornholm, Brønderslev, Faaborg-Midtfyn, Fanø, Favrskov, Faxe, Frederikshavn, Gribskov, Guldborgsund, Haderslev, Halsnæs, Hedensted, Hjørring, Holbæk, Holstebro, Ikast-Brande, Jammerbugt, Kalundborg, Kerteminde, Langeland, Lejre, Lemvig, Lolland, Læsø, Mariagerfjord, Middelfart, Morsø, Norddjurs, Nordfyns, Nyborg, Næstved, Odder, Odsherred, Randers, Rebild, Ringkøbing-Skjern, Samsø, Skive, Slagelse, Sorø, Stevns, Struer, Svendborg, Syddjurs, Sønderborg, Thisted, Tønder, Varde, Vejle, Vesthimmerland, Viborg, Vordingborg, Ærø

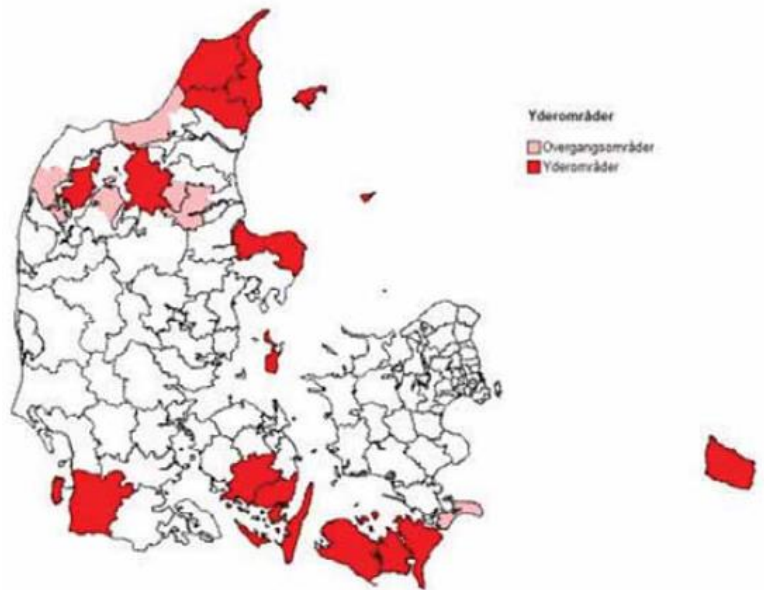


Figure 10: Typologies of Danish land districts. Peripheral areas. Source: UHI, Danske Regioner, 2010; p.67 <sup>15</sup>

- Another typology was made by Danish Ministry of Food, Agriculture and Fishery in 2007. The typology reacted to the new municipal structure after the structural reform when 98 municipalities were divided into four categories.
  - Peripheral municipalities (predominantly rural) – dark purple colour (16 municipalities)
  - Rural municipalities – red colour (35 municipalities)
  - Intermediate municipalities – orange colour (17 municipalities)
  - Urban municipalities – light yellow colour (30 municipalities)

<sup>15</sup>

Peripheral: Hjørring, Brønderslev, Dronninglund, Frederikshavn, Morsø, Vesthimmerland, Læsø, Norddjurs, Samsø, Tønder, Svendborg, Faaborg, Midtfyn, Langeland, Ærø, Lolland, Guldborgsund, Bornholm, the 27 islands in Comparative late Danish Islands.

In transition: Noerager, Arden, Hobro, Brovst, Fjerritslev, Pandrup, Sydthy Thyholm, Moen, Sallingsund, Sundsøre



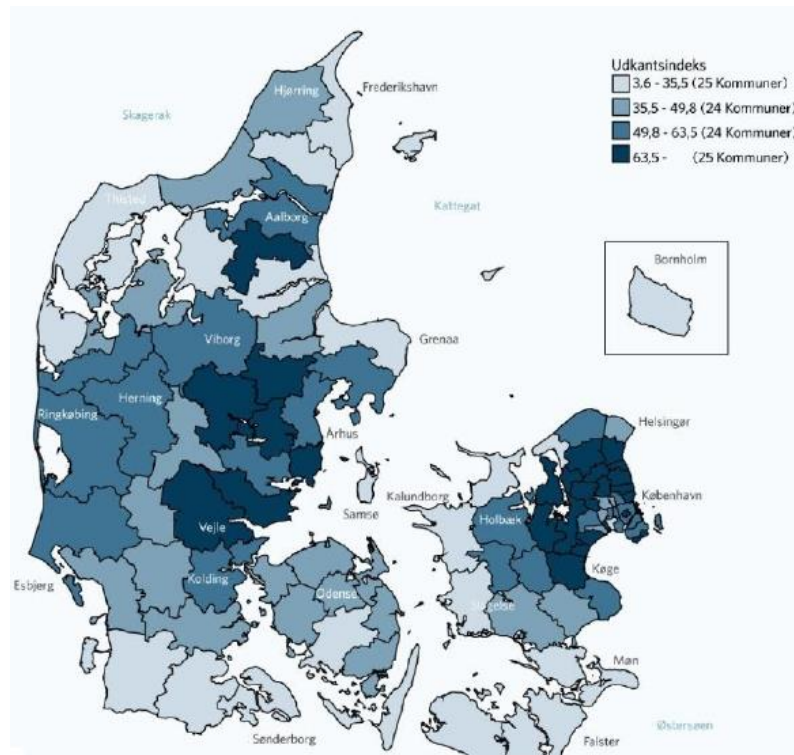


Figure 12: Typologies of Danish land districts. Peripheral areas. Source: UHI, Danske Regioner, 2010; p. 69

- The Ministry of Housing, Urban and Rural affairs (Ministeriet for By, Bolig og Landdistrikter) has categorized Danish municipalities into two categories based on the criteria if the traveling distance to the closest city with more than 45 000 inhabitants is more or less than 30 minutes. The municipalities where the travelling time is more than half an hour are categorized as peripheral (Dansk Økonomi • Forår 2015, 2015)



**Figure 13: Typologies of Danish land districts. Peripheral areas. Source: Dansk Økonomi • Forår 2015; p.237**

As observed, even the definition for the periphery areas in Denmark, has its own differences due from the perspectives in which is dealt. Therefore, it is important to underlay the typologies of the land districts depending on the categories in which they will be framed.

Remote areas need, as it has been explained before and with similarity of the shrinkage areas, to deal with global markets that often bypass them, and consequently with the decline in their economic, social, functional and spatial development. In particular, peripheral regions have to cope with a few unique characteristics, such as (Magnoni & Bassi, 2009):

1. Remote location: Accessibility of the place determines the economic situation
2. Low population density: The efficiency of the strategies implemented are difficult to thrive due to the dispersed population.
3. Prejudicial demographic structures: Migration of youth people, ageing.
4. Weak urban networks: In their areas, the use of land is mainly rural and the urban settlement is low. Therefore, it is difficult to create networks and strategic policies for growth.
5. Fragile economic development: The economic structure is not developed due to the logistics costs, unemployment, elderly population... The mono-structural based economy linked to agriculture.



To conclude, it is feasible to address the similarities in the main characteristics that define the dynamics in between the periphery areas in Denmark and the shrinkage described in general terms:

DIMENSIONS	
SHRINKAGE	PERIPHERAL AREAS (in DK)
Economic transformation	Logistic costs Fragile economic development (Mono-structural)
Spatial Changes	Housing Remote location Low population density
Demographic changes	Prejudicial demographic structures: Migration Ageing
Political transformation	Centralization Weak urban networks (strategic common policies)

**Table 3: Comparison between shrinkage and peripheral areas dimensions. Source: Author's work**

## 5.6 Strategies and networks

The decline in the periphery areas promoted in Denmark a main goal to ensure equal development in every municipality but, since the reform in 2007, there has been a swift from these national strategies towards more local/regional solutions. From a political and/or governance point of view the turn was from centralism towards decentralism, but the administrative centres stays still in the big metropolis.

The focuses in the local resources and opportunities play now the most important role where the tourism and leisure activities are trying to be reinforced. Moreover, the high prices of the houses in the big cities promoted the attraction in the surrounded areas the low prices but, this fact can't be affordable in the periphery (EUKN National Focal Point Denmark 2010).

### 5.6.1 National level

In national level, which missions are the overall frames, there are investigation reports what helps to address the settlement strategies in an attempt to attract and retain newcomers. For example, surveys made by Danish Building Research Institute (SBI – AAU) or the Ministry of Housing, Urban and Rural:

- “Newcomers to the outside areas: transformation, integration and strategies”<sup>17</sup> provides information about the work of the people who live in remote areas and how the inhabitants feel when they move there, according the existing infrastructures.
- “Settlements in the periphery”<sup>18</sup> analyses 45 peripheral areas appointed by the government where it is particularly necessary to make an effort regarding to residential and commercial development to maintain an economic balance between the country's regions.
- “Social innovation and social entrepreneurs in remote areas: An inspiration catalogue with Danish examples”<sup>19</sup> identifies methods how, creating social innovation aimed at addressing some of the challenges that Danish peripheral areas are facing, and thereby contribute to spread good practice for inspiration and learning . The report is based on a broad definition social innovation and social entrepreneurs as the true inspiration of the research literature on the field.

In this level, the Ministry of Business and Growth contributes also in the analysis for the development in Danish areas, as for example the Femern Belt and its possibilities for connecting German tourist to Lolland and Copenhagen.

### 5.6.2 Regional level

In regional level, the main tasks are (Herning 2010) (UHI, Danske Regioner 2010):

- The preparation of development plans, which would include a general vision for regional development in the areas of nature and environment, business, tourism, employment, education and culture and development in peripheral and rural areas. The regions have the opportunity to coordinate activities in these areas and secretarial service for the new regional growth

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<sup>17</sup> “Tilflyttere til yderområder: forandring, integration og strategier” (Nørgaard, Jensen, et al. 2010)

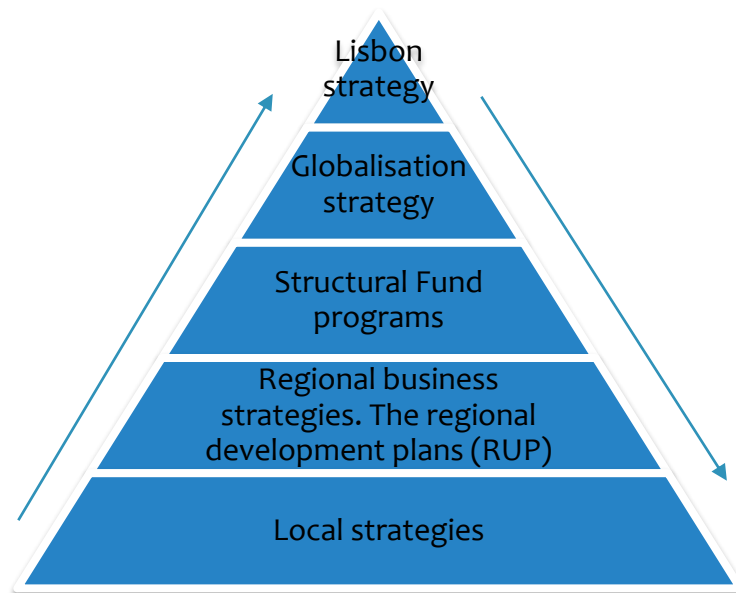
<sup>18</sup> “Bosætning i yderområder” (Ærø, Andersen and Suenson 2005)

<sup>19</sup> ”Social innovation og sociale entreprenører i yderområder Et inspirationskatalog med danske eksempler” (DAMVAD Danmark A/S 2009)

- The responsibility for a number of institutions for vulnerable groups and groups with special needs.
- Establishment of transport companies throughout Denmark. The transport companies are responsible for public bus services in the region and the county railways that are not transferred to the state.
- Local engagement: It underlines that rural areas are today much more than agriculture, and EU rural development funds should be better used for inserts, fostering growth and development for the benefit of all those who live, train and work in remote areas.

Thus, regional development have the main role to create, evolve and strength the cooperation networks with business, municipalities, organizations and scientific and educational institutions in both the strategic as the operational work of growth and future jobs. All national growth initiatives should include considerations on the synergies and cooperation opportunities in relation to the regional partnerships. (Herning 2010).

In the next figure, it can be observed the frame in levels (from local to EU) about how Denmark contributes to growth and creation of jobs.



**Figure 14: The coherent Danish growth model. Source: UHI, Danske Regioner, 2010; p. 20**

The current challenges of business and labour is different in the depending the areas of the country. Therefore, based on the specific regional challenges and strengths, regional growth pretends to reinforce those characteristics for the development of the region (UHI, Danske Regioner 2010):

- **Region Nordjylland:** The challenges embrace the creation of job through the development of telecommunications and logistic systems (*Brain Business project*); network cooperation's project (*Cross Media*) with Midtjylland for the creation of new companies and business units in the game, applications for mobile phones as well as tools for teaching and communication; innovation within small business targeted to the export and construction sectors.
- **Region Midtjylland:** The strategies are targeted to the climate and the energy by improving the access of biomass and wind energy to the population; growth of the food industry through information to institutions; innovations in the social care through the creation of partnerships of knowledge among hospitals, research centres and other institutions.
- **Region Syddanmark:** The projects created for the creation of employment focus in cooperation between public and private partners promoted new business areas and products in welfare technology (*Welfare Tech Region*); through tourism (Vadehavet nature park) and leisure business (Lego, Danfoss universe, The adventure academy); boost the green offshore energy and companies what produce electronic components, robotics or green energy emission houses. Moreover, in connection with Schleswig-Holstein<sup>20</sup>, there is a cross-border cooperation what core is the business development, climate and energy, education and cultural cohesion.



Figure 15: Danish regions after the reform in 2007. Source: [http://wiki.openstreetmap.org/wiki/Da:Danske\\_Byer](http://wiki.openstreetmap.org/wiki/Da:Danske_Byer)

<sup>20</sup> German state in the frontier with Denmark

- **Region Sjælland:** The promotion projects seek innovation contracts with Risø DTU, Technological Institute and RUC Innovation through the establishment of the regional capital CAT Invest Zealand; a project to encourage small and medium-sized enterprises participate in the works at construction sites, servicing of the major construction companies and international cooperation (*Klar til Fehmern Bælt* 2012); cooperation with the Copenhagen for marketing and investment promotion to the area or transport centres (*Copenhagen Cleantech, Medicon Valley*).
- **Region Hovedstaden:** The capital's high research and innovation level generally contributes to boost growth throughout Denmark, therefore by reinforcing the logistics and infrastructures, the development of the whole country will be affected. Other kind of policies include integration, mobility, labour market flexibility, knowledge and innovation as well as culture and tourism (*Wonderful Copenhagen*).

Besides that, and even it is promoted for the United Nations, it should be underlined the **Local agenda 21** what consist in an action campaign on sustainable development adopted at the United Nations Conference on Environment and Development in 1992. It is not obligatory but it urges local authorities in all the Member States of the United Nations to implement the ideas of sustainability in each community by undertaking a consultative process with their populations and by taking a comprehensive perspective including not only environmental factors but also economic and social ones (Ministry of Environment and Energy, Denmark - Spatial Planning Department 2000).

### 5.6.3 Local level

In a local level, the responsibilities, after the structural reform have also changed and the municipality tasks are dealt with a closer communication to citizens. The municipalities have increased their responsibilities (Kommunernes Landsforening - KL 2009) and they have more activities in topics as environmental control, adult education, specialized social services, employment policies (local job centers), economy and development.

The implementation of policies and strategies in a local level, plays an important role for the successful evaluation and development. Thus, policy makers and citizens establish a relation of mutual trust which common objectives are done by the analysis of cross-sectorial evaluation and their impacts in the society, economy and environment. (Magnoni og Bassi 2009)

The strategies in local level will be analysed in the chosen case studies in order to address, in deeper research, how the municipalities counter the shrinkage in their own plans.

## 5.7 Partnerships for common cooperation

There are also campaigns in private-public level aiming the development of the areas in which the decline is undergoing. These projects are multi-sectorial and, after the analyses of the municipalities by planners and other stakeholders, it is decided to ask for funds and/or create networks to carry out the visions and objectives that they need.

In this section, the projects will be introduced but, it will be in the case studies, where the local projects are analyzed.

### Yderområder på forkant<sup>21</sup>

Yderområder på forkant (Yderområder på forkant 2015) is a campaign to strength adaptation, adjustment and development in peripheral areas of the cities - for the benefit of the country. The campaign supports the development of long-term strategic plans in 20 municipalities in remote areas, and in addition 6 pilot projects (Lolland and Bornholm are included here). Common to all strategy projects is that they are based on a serious and realistic view of the future challenges on each municipality's specific challenges and potentials.

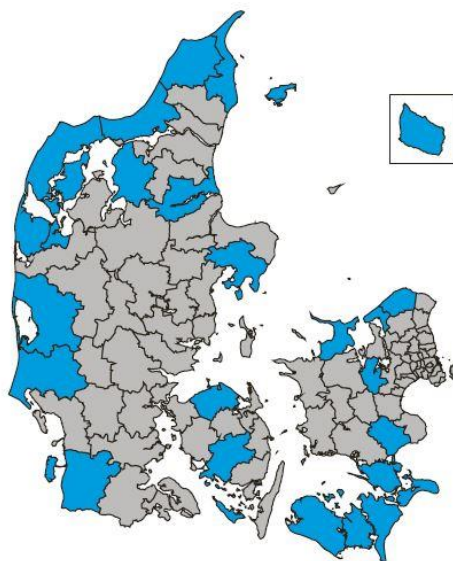


Figure 16: Municipalities participation in the campaign. Source: Yderområder på forkant, 2015; p. 7

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<sup>21</sup> Peripheral areas, the first

The partnership is formed by of the Ministry for Housing, Urban and Rural Affairs, Ministry of Environment v / Nature Agency, KL and Realdania.

The main targets are:

- Developing long-term strategic plans: By supporting 26 projects strategy creates a laboratory what develops new methods, knowledge, experience and networks.
- Network and exchange of experience between the selected municipalities. The network supports the development and sharing of knowledge, methods and approaches and providing a platform of sustainable development and conversion.
- Communication and dissemination that contribute to the sharing of experiences with methods, knowledge and tools for all municipalities outside the main urban areas.

The campaign will be perform until the summer of 2017 and has a total budget of 20 million. Kr. Additionally, it is expected that the municipalities contribute 10 million. Kr. in co-financing.

### Stedet Tæller<sup>22</sup>

Stedet Tæller (Realdania 2012) is a Realdania campaign that is performed until the end of 2016 and it supports concrete physical projects in the peripheral regions of Denmark. The aim of the campaign projects will help to develop and utilize the localized potentials that can contribute to strengthening the quality of life in remote areas

It could include what could be potentially beneficial to the municipality: Heritage of buildings and landscapes, proximity to the magnificent natural beauty, a vibrant local crafts tradition, local culture, local values and self-understanding, local knowledge and social networks that have emerged over time in one place.

The campaign has three focus areas:

- Mulighedernes Danmark<sup>23</sup>: It focuses on the localized potentials as a basis for sustainable development.
- Kvalitet i kysternes turistbyer<sup>24</sup> : It focuses in how the high quality in a coastal urban built environment can benefit tourism development and local citizens.

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<sup>22</sup> The place counts (own translation)

<sup>23</sup> Opportunities in Denmark (own translation)

<sup>24</sup> Quality of coastal tourist cities

- Steder i landskabet<sup>25</sup>: It aims to show the importance of the places with high architectural quality with a minimum investment.

### Mulighedernes Land<sup>26</sup>

This partnership has been chosen due to that the projects are carried out in Lolland, Bornholm (case studies analysed in this thesis) and Thisted Municipality.

The project focuses on tourism, settlement, cultural heritage and spatial planning and its goal is to show new ways for development Denmark's peripheral areas. The criterion of success is not necessarily economic growth, but to support and strengthen areas.

The total budget is 245 mill. DKK supported by Realdania and the municipalities involved, but external agents (consulting firms) as Hausenberg and Oxford Research have also promote their initiatives (Realdania 2012).

### EU regional and social funds

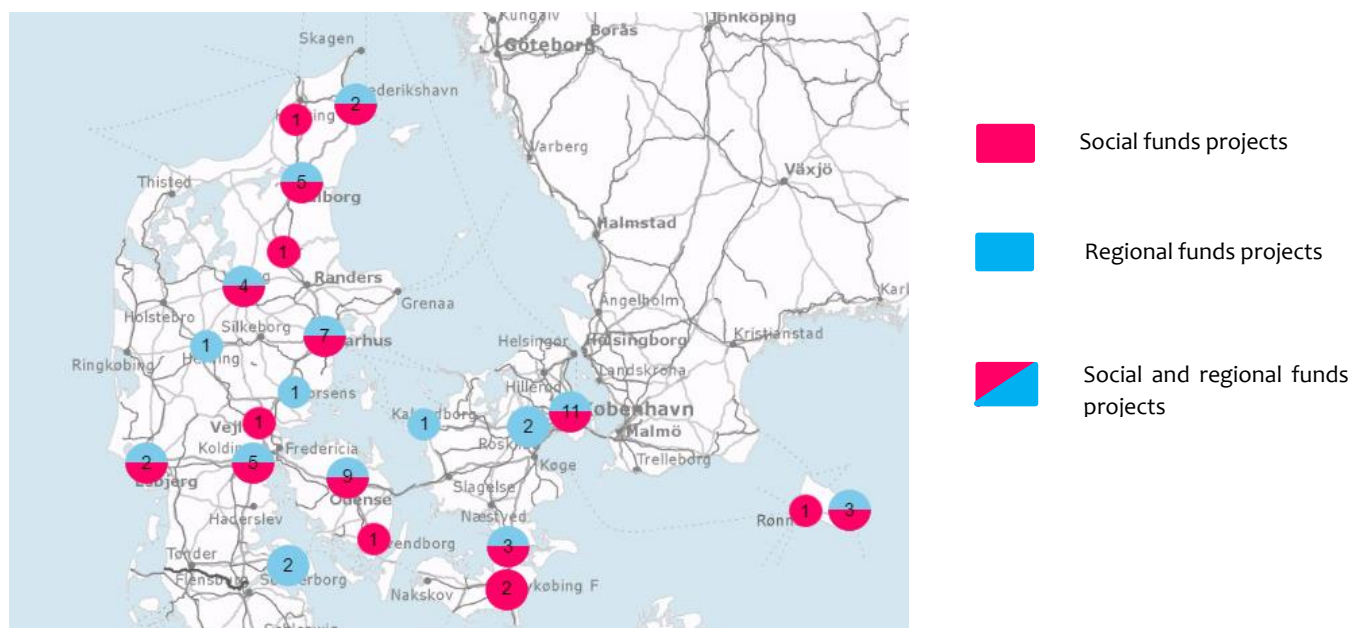
The EU structural funds are intended to strengthen competitiveness and employment in Denmark. It is the regional growth forums that prioritize the specific projects to be launched with support from the structural funds. Therefore, as it is the growth forum in charge also for the development in the peripheral areas, they have to include the interventions that those decline areas need in order to receive the funds (Erhvervsstyrelsen 2015).

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<sup>25</sup> Places with scenarios

<sup>26</sup> Opportunities' land





**Figure 17: Map of the projects with EU, regional and social funds. Source: <https://regionalt.erhvervsstyrelsen.dk/projektkort>**

In 2014-2020 Regional Fund and the Social Fund invests about 3 billion. kr. in growth and employment in Denmark. The money is among other targeted to innovation, entrepreneurship, green transition, education and employment promotion.

In the previous map, it can be observed the current projects with this kind of funds and those concerning the areas in the case studies will be analyzed.

### Dansk Kyst- og Naturturisme<sup>27</sup>

Danish Coastal and Rural Tourism is a foundation that helps to develop and growth in the coast areas and nature tourism in Denmark. It is supported through the close collaboration with municipalities, regions, tourism industry, VisitDenmark, Meet Denmark (Danish Meeting and Business Tourism) and Wonderful Copenhagen (Danish City tourism). (Dansk Kyst- og Naturturisme 2014)

The foundation is working with nine projects, which are defined by the Fund's action plan for coastal and nature tourism in Denmark from 2016 to 2018:

Growth projects in high-priority destinations
Capacity: Business development in the camping sector

<sup>27</sup> Danish Coastal and Rural Tourism

Tourism Infrastructure: Product and business development in the holiday sector
Investment promotion: Facilitator, prospectus catalog, knowledge base
Active nature tourism: Development of outdoor sites / destinations and Business Development under the auspices of REACT (InterReg. project)
Funds for international marketing
Market Germany
Market Denmark
Danish tourism skill

The focus areas are defined based on the expectations that coastal and nature tourism's key stakeholders to the company. An analysis done during autumn 2014 designates a stronger commercialization of coastal and nature tourism and growth in the international neighboring markets as our main focus areas.

## 6. CASE STUDIES

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### 6.1 Introduction

In the following section, the chosen municipalities as case studies are going to be analysed. Their investigation is connected with the research questions and it will serve as quantitative and qualitative data for the successive conclusions and discussion.

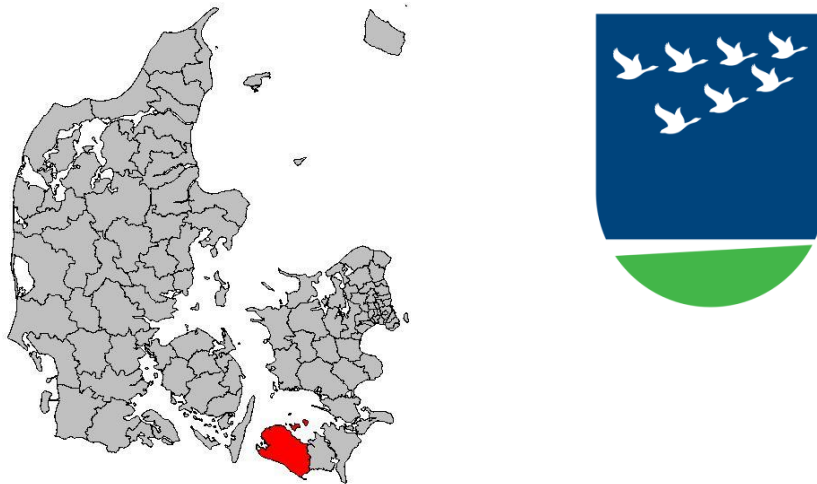
One of the aims of the project is the investigation of a municipality that is challenged by the shrinkage and in a Danish context. The peripheral position is a fundamental fact in the decline of population but also social and economic aspects must be researched. As representative municipalities Lolland, Bornholm will be studied as case studies.

The structure of the exposition for the case studies will be similar, following the same characterization in all of them:

- **Population development:** Evolution and characteristics of the ageing of the population.
- **Education level**
- **Economy:** Main trends of the local economy and its structure, income level and unemployment.
- **Peripherality:** Following the characterization made according the typology of land districts.
- **Strategies and development plans:** Taking into considerations the visions and policies developed by the municipalities in their own development plans, the main topics related with the shrinkage are going to be exposed. The aim is to visualize and understand the tendencies in the case studies to compare them and assess the dynamics of the decline on them.
- **Networks and partnerships strategies:** In this part, examples of networking where the cooperation of public-private stakeholders are defined to prove the importance for boosting the decline areas.

### 6.2 Lolland

Lolland is Denmark's fourth largest island (after Sealand, The Nørrejyske Island and Fyn). Together with the neighbouring island of Falster, with which it forms a Danish geographical sub-region, Lolland covers an area of 892,92 km<sup>2</sup> (Noegletal, 2013).



**Figure 18: Lolland situation map and symbol. Source: [www. lolland.dk](http://www.lolland.dk)**

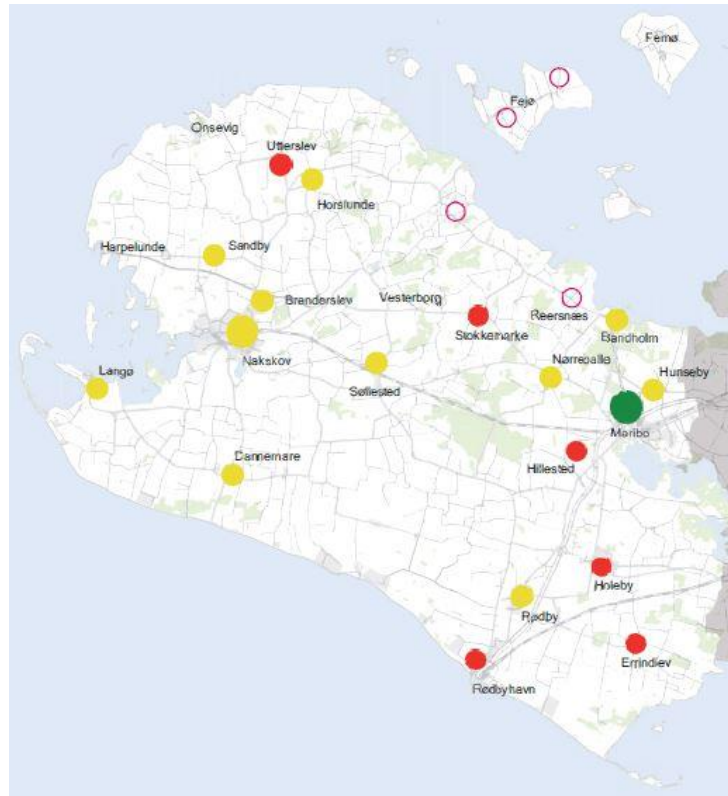
The municipality is made up of the former municipalities Holeby, Højreby, Maribo, Nakskov, Ravnsborg, Rudbjerg and Rodby. The municipality includes the entire western part of Lolland with the islands Fejø and Femø (Gyldendal 2014). The administrative center is Maribo but Naskov is the biggest city and with more habitants.

Nakskov Søllested and Maribo are placed on the east-west axis and Rodbyhavn, Rodby, Holeby and Maribo on the north-south axis. The most of municipal housing, jobs and education are located in the cities, and especially Nakskov and Maribo which works as key service centers for rest by the municipality (Lolland Kommune 2015).

The landscape is flat and mainly rural areas (Nielsen 2016). The island has some of the best farmland, which exploited to produce food locally. Lolland is located in a "climate zone", which is few graders warmer average temperatures than in the rest of the country.

Farming on Lolland has historically been characterized by large estates, which for a long time was the main source of income for the region. Especially cultivation sugar beet has since late 1800 been of great importance for the Lolland economy, but mainly the corn occupies an important place in the fields (Nielsen 2016). Its countryside and villages around the estates, and agriculture still one of the largest business in Lolland Municipality, followed by tourism, industry and public service. (Hausenberg ApS and Realdania, 2012). The ferries to Puttgarden in Germany, the port and the related activities are important activities in the area, but with the opening of the Great Belt Link in 1998 made Rødbyhavn to lose large volumes of traffic, especially freight traffic, and many jobs. (Gyldendal, 2014).

In historical perspective, Lolland has been traditionally a rich and dynamic region, but over the last 50 years, the area has been under pressure of urbanization and globalization. Since the 50's and with modernization of the fields including the big machinery for working in the fields, the decline in number of jobs and, consequently, the population has declined becoming one of the big problems in the municipality (Nielsen 2016).



**Figure 19: Development of Lolland cities. Source: Lolland Kommune, 2015; p. 15**

As observed in the last figure, the map is showing how different Lolland Municipality's cities have evolved over the last seven years. Only Maribo has had a stable population (thus green). Nakskov, Rodby, Soelsted and a number of smaller villages have declined, but it has been less than the average in the municipality (hence yellow). Høleby, Rødbjhavn and a number of smaller villages have seen a decrease greater than average (therefore, red). Birket is from 2015 come under 200 inhabitants and it is therefore no longer a city of Statistics Denmark. Previously, Vesterby and Østerby on Fejø and Reersnæs also declined for this limit. In general, the decline was largest in North Lolland, on Islands Smålandshavet and in the municipality Southeast.

In the late 1990's, the wind turbine factory in Nakskov provided development to the area with environmentally friendly solutions, including the establishment district with heating plant and

biodepuration. The creation of centers as Forskerpark Lolland<sup>28</sup>, Wind Power Academy, Ravnsborg Havforskningscenter and Nakskov Hydrogen Research, try to reverse the negative trends existing in the island. Moreover, in Holeby the development has turn industrially where the firm Danisco stablished there and produces sugar beet seeds and it is the place where planners' vision is to evolve as the business centre in the municipality (Nielsen 2016). Knuthenborg and Rødbyhavn aimed their development in tourism where they made a Safari park and Lalandia, respectively (Gyldendal, 2014).

### Population development and composition

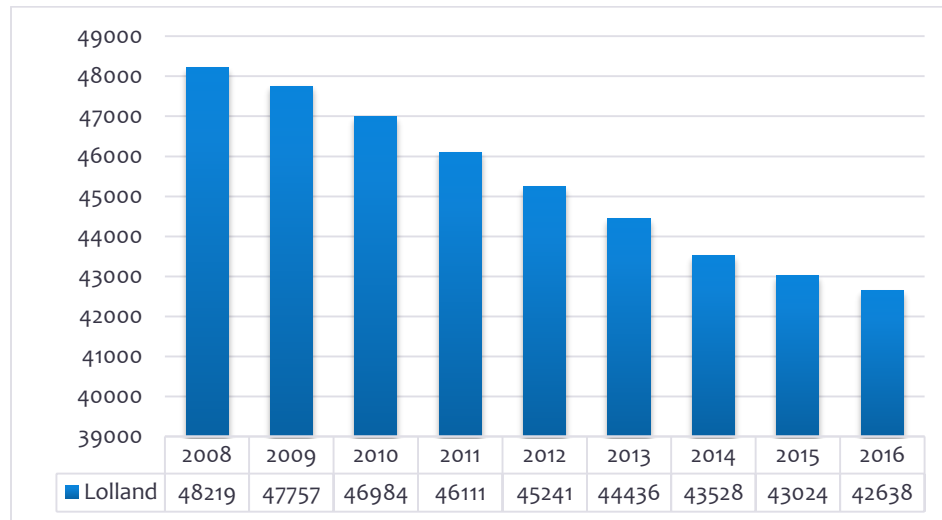
The population has been shrinking since industrialization in the municipality where the main source for living is the agriculture. The urbanization has meant a steady population decline since the 1950's, but the phenomenon has accelerated during the financial crisis by around 900 citizens / year. The trend is, however, weakened in 2014 decline in an amount of 500 citizens. As underlined before in this thesis, population decline affects urban service supplies and villages experiencing a negative development due to a descent of the municipal services and consequently the move of inhabitants. (Lolland Kommune 2015)

	Indbyggertal			Langtidstendens	Mellemlang tendens
	1981	2007	2015	1981-2015	2007-2015
Nakskov	16.218	14.051	12.665	-22%	-10%
Maribo	5.964	5.988	5.966	0%	0%
Rødby	2.572	2.341	2.110	-18%	-10%
Rødbyhavn	2.517	1.997	1.589	-37%	-20%
Holeby	1.958	1.653	1.441	-26%	-13%
Søllested	1.431	1.513	1.432	0%	-5%
Horslunde	742	756	674	-9%	-11%
Bandholm	772	718	666	-14%	-7%
Nørreballe	584	586	514	-12%	-12%
Dannemare	472	472	435	-8%	-8%
Hunseby	531	451	425	-20%	-6%
Stokkemarke	529	528	412	-22%	-22%
Sandby	466	437	390	-16%	-11%
Langø	437	350	311	-29%	-11%
Errindlev	399	344	287	-28%	-17%
Utterslev	379	313	246	-35%	-21%
Hillested	309	292	237	-23%	-19%
Branderslev	296	231	226	-24%	-2%
Landdistrikter inkl. Birket	20.986	15.529	12.871	-39%	-17%

**Table 4: Population and its tendencies in Lolland. Source: Lolland Kommune, 2015; p.16**

<sup>28</sup> Center for companies in the alternative energy

The population in Lolland, as it is possible to see in the figure 20 and table 4, is in a clearly decline. In the last 8 years, the population has fallen from 48219 in 2008 until 42638 inhabitants in 2016 what is 5581 people (-11,57%).



**Figure 20: Population development in Lolland. Source: Author's work based in Danmarks Statistik**

One of the main reasons for this recession is the migration what has suffer the municipality to the main cities in Denmark, as it was called before “National urbanization” in which the demographic movement path is from rural area to big cities.



**Figure 21: Empty street in Rødby. Source: Own source**

### Population age

Another important fact in the population is the ageing in the municipality what is raising in the last years, as it is possible to observe in the figure 22. In the last ten years the percentage of people older than 65 years has increased from 21,1 % in 2007 until 27,5% in the first period of 2016.

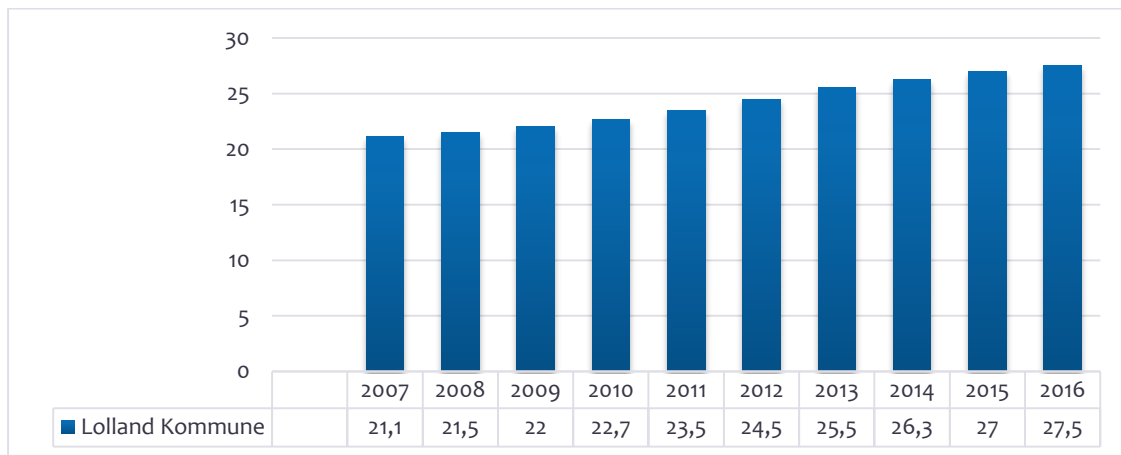


Figure 22: Inhabitants older than 65 years (percentage). Source: Author's work based in Noegletal, 2013

The next Figure 23 shows the population age structure where an important value should be underlined: the decline of population is visible from 0-64 years old but, on the other hand the range older than 64 years old is rising.

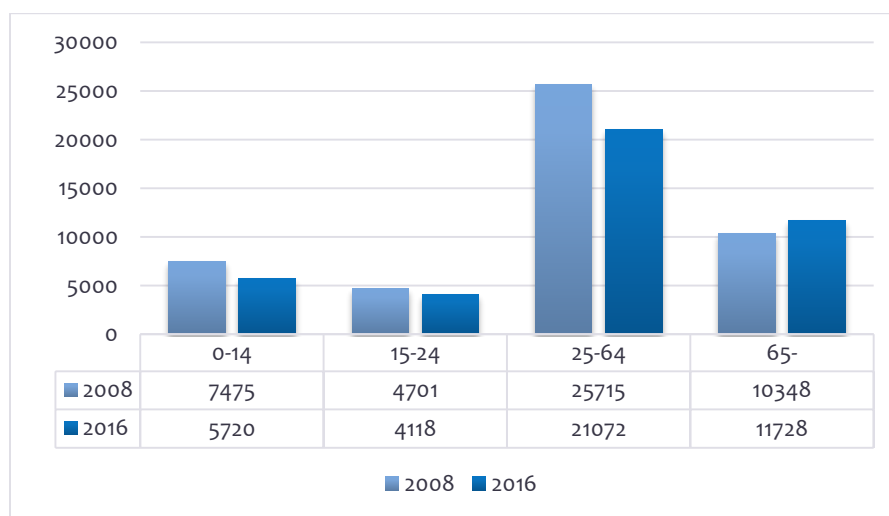


Figure 23: Population age structure from 2008 until 2016. Source: Author's work based in Danmarks Statistik



## Education Level

The analysis of the education level is studied in comparison with Copenhagen. Thus, the differences in this topic are more valuable due the importance of the low level of education and it is given less attention if it is rising or declining.

According to figure 24, there is a high quantitative difference between Lolland and Copenhagen. Both municipalities are declining in percentage of people from 25 to 64 years old, without professional training but, the interest fact is that Lolland has more than double (in percentage) inhabitants with 30,4 % than Copenhagen that is 13,8 %.

The amount of people with high education is even more drastic due to the observed values. In the last 9 years, Lolland has increased only 1,4 % of population with high education and during this interval Copenhagen has boosted in 7,8 %. Another important fact is the difference between both municipalities in the values from 2015 where there is a difference of 29,3 % of population with high education.

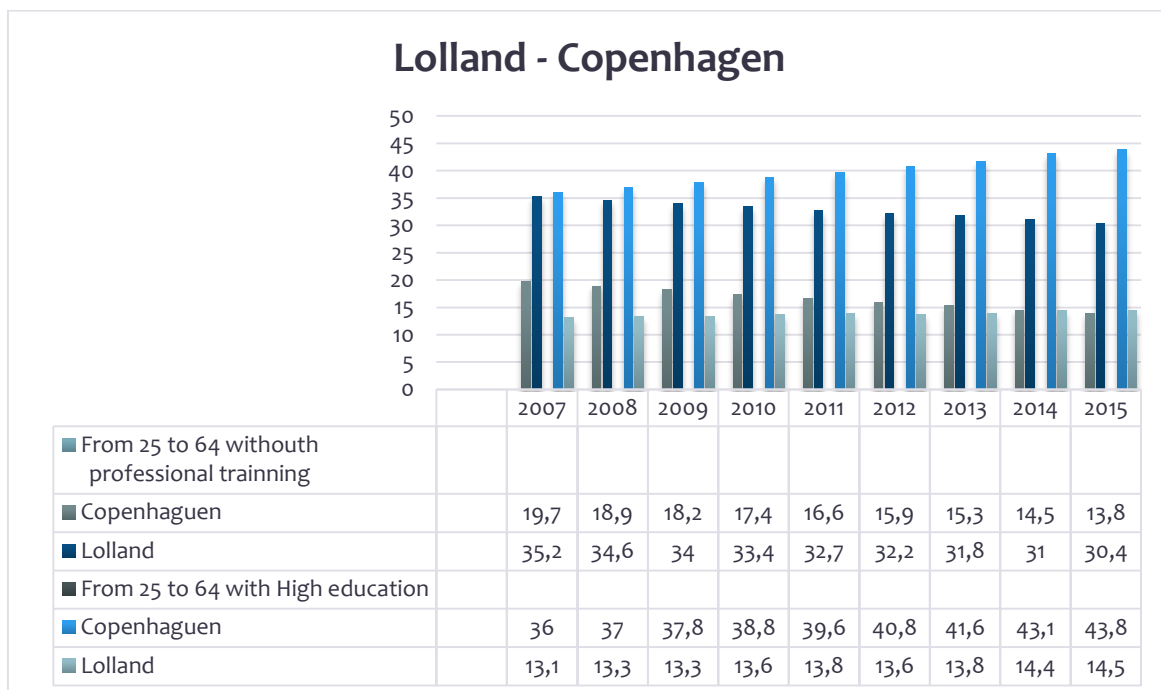


Figure 24: Education level. Comparison between Lolland and Denmark. Source: Author's work based in Nøgletal

## Economy

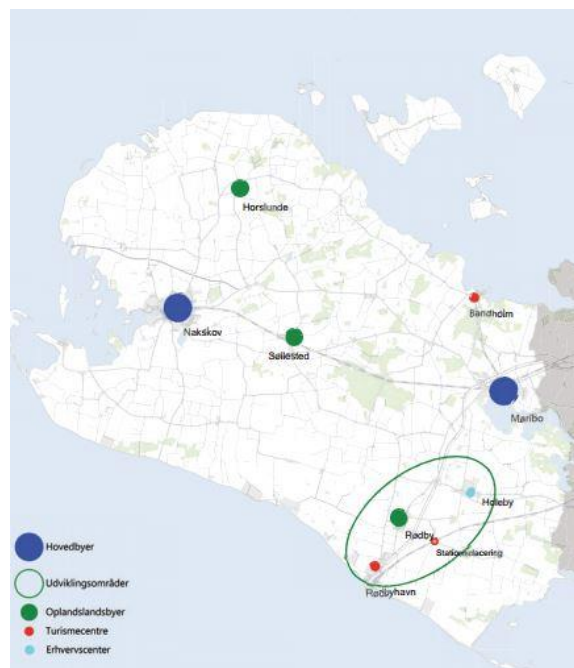
The main towns Nakskov and Maribo are centers of settlement and occupation. Even tourism has never been the biggest income value, Rødbyhavn and Bandholm constitute two of the municipality's main

attractions, which every year attracts hundreds of thousands of guests from outside (Nielsen 2016). Tourism is a growth industry, and it can help to create development and activity in the both cities what needs more development, as hotels, for example. In Holeby there are settled productive existing companies, built on the favorable location by the highway. Horslunde, Soelsted and Rodby are cities mostly for housing for the surrounding rural areas and smaller villages (Lolland Kommune 2015).

However, rural areas are the main resource for Lolland. Agriculture, Food and Tourism are a the principal engine for the region future and, up to one third of the municipality citizens, have chosen to settle outside the cities, either in one of the small villages or completely out in the open countryside (Lolland Kommune 2015).

Moreover, the construction of the tunnel in Fehmarn<sup>29</sup> will establish a new station in the south of Holeby and east of Rodby. The station offers unprecedented opportunities for settlement and industry, and the municipality has designated a development area network among Rodby, Holeby and Rødbyhavn what will require understanding and a clear division of roles (Lolland Kommune 2015).

In the next figure, can be observed the main areas for the development in Lolland what are clearly affected by the construction of the tunnel.



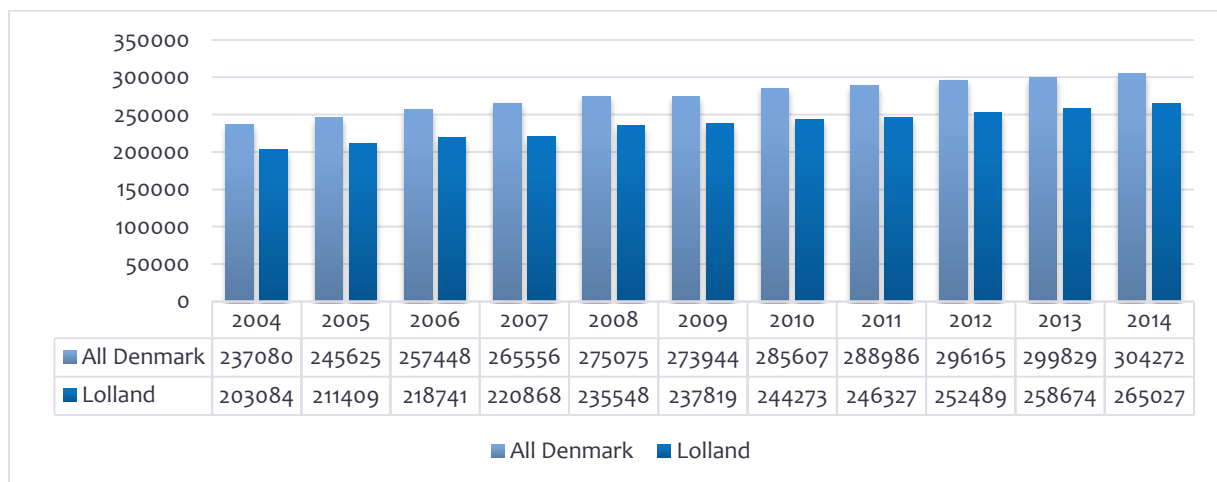
**Figure 25: Development areas in Lolland. Source: Lolland Kommune, 2015; p. 12**

<sup>29</sup> The Fehmarn Belt, a strait separating Fehmarn from Lolland, is located on the side opposite to Germany. It can be crossed by ferries travelling between the seaports of Puttgarden, Germany, and Rødbyhavn, Denmark. The crossing takes about 45 minutes. (Femern A/S 2015)

The declining population has damaged also the housing market. The strategies for the development within this topic will be underlined in the local strategies.

### *Income level*

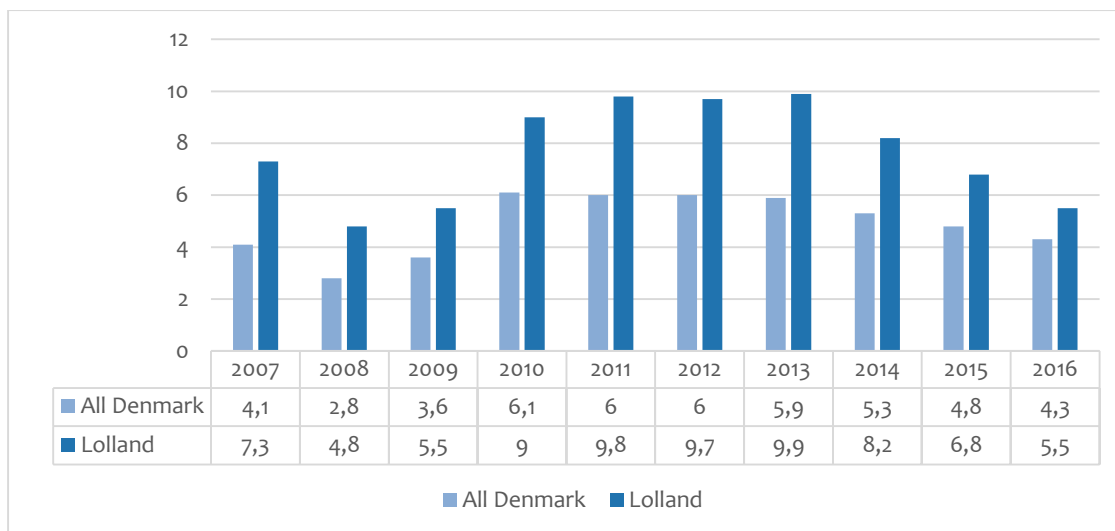
The income level is analyzed in comparison with Denmark, in order to underline the differences between them. As it is possible to see in the figure 26, the monthly income level in Lolland is around 15% less than the average in Denmark. Even there is a positive growth in the development, the salaries are low and the tendencies lines are in parallel in both Lolland and Denmark, what induces to think the external influences in the data (globalization). This fact affects the attraction of people to live in the municipality and also, it can be deduced from the figure the low level education in Lolland due to the differences in income among people with high and low education.



**Figure 26: Average of personal income between Lolland and Denmark (DKK). Source: Author's work based in Danmarks Statistik**

### *Unemployment*

The unemployment is also analyzed in comparison with Denmark, in order to underline the differences between them. Lolland reached the maximum rate in 2013 with 9,9 % meanwhile, Denmark reached in 2010 with 6,1%. Since 2014, the decline in both cases, begin to appear until February 2016 where Lolland has 5,5% and Denmark, 4,3%. As analyzed before with the income level, the tendency lines are parallel in both cases.



**Figure 27: Unemployed population (seasonally adjusted - February) by actual figures, region and time. Source: Author's work based in Danmark Statistik**

## Peripherality

According with the typologies of the Danish land districts, it is made the next figure to classify and verify Lolland as peripheral area:

TYPOLOGY MADE BY	LOLLAND
Realdania	Peripheral
EU structural funds	Peripheral – Land district
Danish Ministry of Food, Agriculture and Fishery	Peripheral
Economic Council of the Labour Movement	Peripheral - Lower index
Ministry of Housing, Urban and Rural affairs	Peripheral

**Figure 28: Lolland and peripherality. Source: Author's work**

## Strategies and development plans

In the previous section of the chapter, the main problems and challenges were identified and consequently, the strategies and development plans in Lolland are going to be exposed. The basic resource in this sub-chapter is the information from Lolland Municipality based in development plans from the municipality and the interview to Jørgen Nielsen.

The policies and strategies in Lolland embrace the vision and objectives of the municipality. Moreover, they provide also a framework for the political and administrative work in which the planners and the other stakeholders put their basis to develop the municipality.

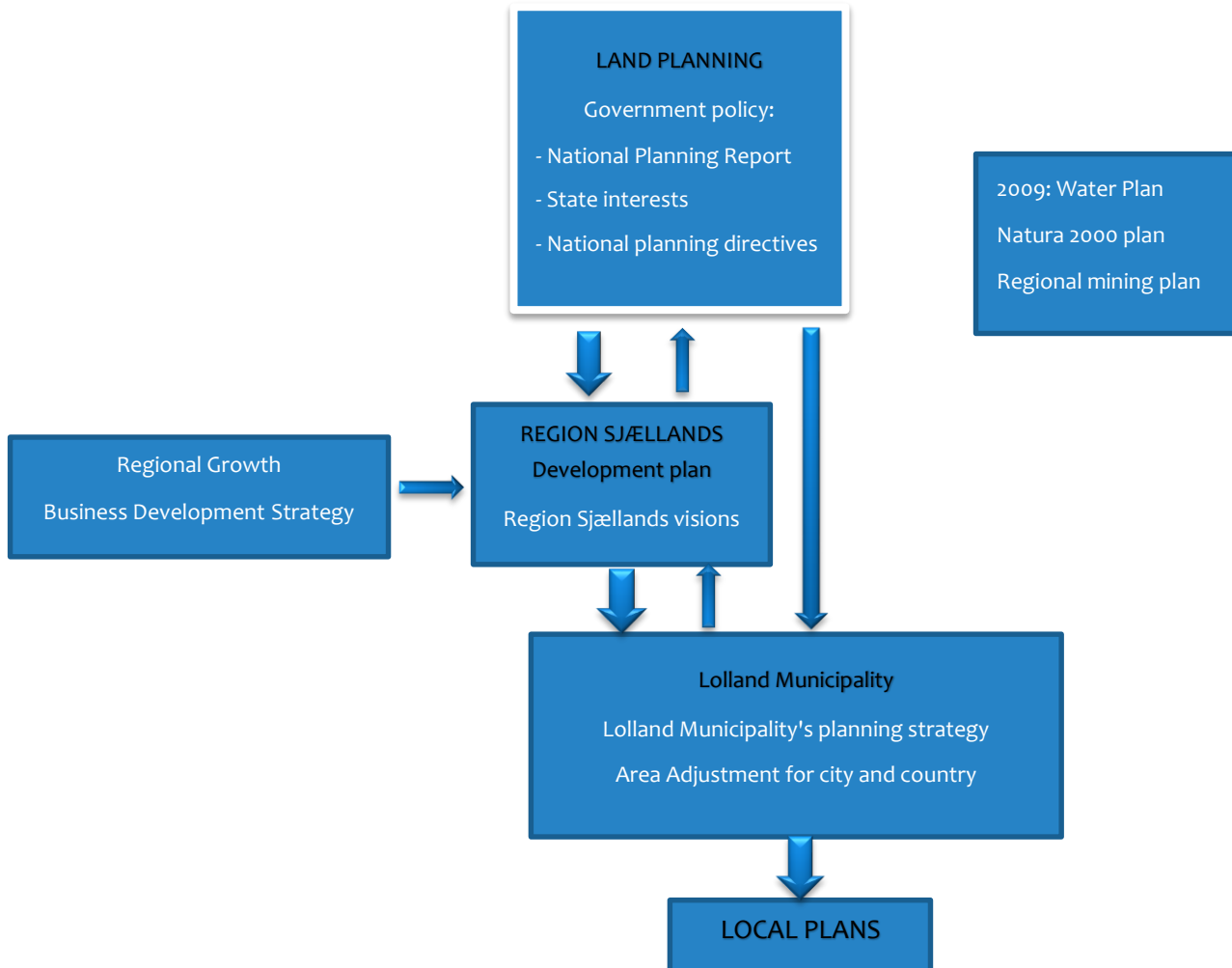


Figure 29: Distribution of planning responsibilities in Lolland after 2007. Source: Author's work based in Lolland Kommune, 2009

Among the policies and strategies, it has been chosen those who could affect to counter the decline and they have been structured depending on the topic:

#### *Economic policies*

- **Business strategies:** The establishment of campaigns targeted to the creation of employment inside areas as the renewal of energy "Energy Cluster Lolland" and infrastructures "Gateway North". Among others, it pretends to bring the transport centers from Norre Aslev to Lolland

but, the main purpose is to establish a tourism communication, which ensures several visitors to Lolland attractions.

Other objectives to create and develop a framework for business and its interaction among culture, business and research and educational institutions for innovation.

- **Femern strategies:** With the construction of the Femern belt, Lolland pretends to create a center around this tunnel through the creation of a visionary and dynamic framework for growth and job creation in existing companies (strengthen the existing business community). The attraction of workers will consequently bring the intention of retaining them with ideas involved the Femern belt what is the establishment of the Femern Agency<sup>30</sup>.

It is the construction of this tunnel where the expectations for the development lies, due to, not only in the possibilities meanwhile is built, but also for the positive evolution that could bring after. Therefore, in the next 10 years, the perspective of growth is almost guaranteed and the main challenge is the adaptation of this opportunity and to create the suitable surroundings to continue developing the surroundings.

In connection with this construction, there are also international strategies that promote the identification, growing culture and identity of understanding as the Fehmarn Belt region. Therefore, there will be more international connections and cooperation what can provide economical (more business and tourism) attractiveness to the municipality.

### *Population development*

- **Settlement strategies:** They are based in strengthen the attraction, reception, retention of citizens and the demographic composition. These policies include three campaigns:
  1. "Job at få"<sup>31</sup> -campaign targeted to skilled jobs at home and abroad
  2. "Bliv lidt længere"<sup>32</sup> campaign targeted to migrant workers in Fehmarn, as commented before, it deals with the future establishment of the people involved in the construction.
  3. Better retention with targeted actions to foreigners through integration to the community.

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<sup>30</sup> Physical office at the construction site or in camp with the presence of the relevant stakeholders that can handle recruitment and consultancy project as well as a virtual platform on the Internet.

<sup>31</sup> Job to get (own translation)

<sup>32</sup> Stay more time (own translation)

- **Child and youth strategies:** The target is the promotion of values in which families and children are the best resource and the future for Lolland.

The objectives aimed also the children with special needs who could have problems with inclusion and to strength children to finish primary school (more than 95%).

To do so, it is underlined the creation of networks of cooperation among parents, children and the institutions.

- **Integration policies:** The municipality have two clear objectives:

*“All people, regardless of gender, race, ethnicity and religion should have best conditions and opportunities to be self-supporting”*

*“All citizens must be able to have the opportunity to take an active part in the community”.*

The policies are divided into the different action groups aiming the equality of the inhabitants considering the background, language, culture, housing, age and work.

This policies improve the image of the place and, at the same time can create community values for the attraction of people.

## *Education*

The close relation between business, skilled workers and citizens provide a perspective in which the creation of education environments is a primarily need in the development of the municipality.

The strategy focuses are based on four business:

- **Health and Welfare:** The need for qualified workers within this topic is likely to grow, even if there is economic crisis. In Lolland, where the population is ageing, the goal is the establishment of connections between training and internship courses with special interest for the investigation for health and welfare cluster. This strategy is also in connection with another one what it pretends the creation of rehabilitation center for people with chronical diseases.
- **Economy and tourism:** The campaign aims the strength in the municipalities' nature and human resources through the development of the cooperation with research institutes (within financial issues) in a multi-sectorial frame (tourism, food, employment).
- **Climate and Energy:** There is a need in the municipality in boosting the networks between agriculture and green energy. Therefore, the impulse of higher education in climate and energy and the creation of internships for the creation of academic environments could provide the municipality of a commercial and educational atmosphere.

- **Transportation and Logistics:** The new corridor that will be created upon the construction of Fehmarn belt will have the need of skilled workers inside the logistic market, both national and international. The focus is in the development of sustainable transportation and logistics training in cooperation with Danish universities.

### *Housing policies*

The challenges in the housing policies in Lolland embrace not only social housing but also, an adjustment in the number of buildings, due to the decline of the population.



Figure 30: Rural areas in Rødby. Source: Own source

In a national level, it exists a fund called “*Landsbyggefonden*”<sup>33</sup> created and regulated by law, which provides financial support to a number of activities (larger renovation, handicap accessibility, needy housing departments, ghetto effort and reimburse part of government support for new construction). Besides that, the social housing purpose is to provide adequate housing available for all who need them at a reasonable rent: youth, elderly or people with special needs.

Aiming the decline of population, there are strategies to adjust the number of buildings (demolition considering the poor conservation, inappropriate location) or to adapt those that could be usable. Thus, abandoned buildings or in poor conditions can be bought for private or public entities to be “consolidated”

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<sup>33</sup> National Building Fund



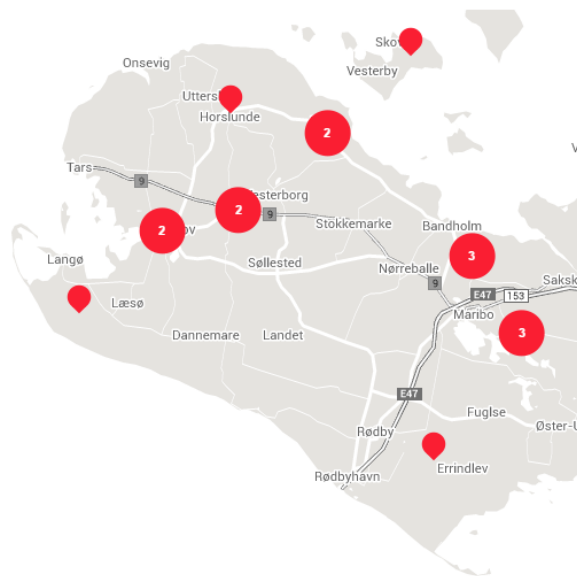
and create bigger leisure areas or buildings that fulfill the requirements for living for ensuring their quality. Spatial planning plays a decisive role in these competences by achieving a balance in the land use in the place. This spatial revitalization causes numerous positive effects as for example, new image of the place.

### Network and partnerships strategies

In this section, as an example, it will be pointed up the campaigns introduced in the chapter 5.4 by those network-partnerships what aims the development of Lolland municipality.

#### *Realdania as partner*

As introduced before in chapter 5.4, Realdania is involved in many of the campaigns. Thus, those allocated in Lolland and in connection with shrinkage in the municipality will be underlined (Realdania 2016):



**Figure 31: Realdania projects in Lolland. Source: [www.Realdania.dk](http://www.Realdania.dk)**

- Touristic- cultural impulse:
  - Fejø Mill: historical monument and tourist attraction. The mill is available for local history teaching and sales area for locally produced food. Realdania has supported the project with funds for new blades.



**Figure 32: Fejøl mill.** Source: [www.Realdania.dk](http://www.Realdania.dk)

- Halsted Kloster: Restauration of Queen Sophie's house.
- Naskov Ship and Maritime Museum: Restauration of the building and promotion of the museum.
- Stubmøller (Kappel): Restauration of the mill what provides a new green space for tourists.
- Maribo: Reform of the cathedral and monastery surroundings and lake to promote a brand new attraction and better conditions of stay in the city.
- Housing market:
  - "Bedre boliger og nye mødesteder i Birket"<sup>34</sup>: As part of the project Mulighedernes Land commented before, this campaign aims to demolish abandoned houses or redesigned for other uses. Therefore, it strengthens the framework for settlement and tourism by improving and rethinking the physical structures content, features and design.
- Business development:
  - Knuthenlund: The goal is to provide rural areas with the traditional way of living by promoting activities as ecological agricultural production, and traditional craftsmanship. The business development is created thanks to the involvement of environmental and social responsibility in the production and management methods.

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<sup>34</sup> Better buildings and a new meeting point in Birket

- Søllested: Renovation of the stables to the new production and dissemination purposes - including a sugar production in mini scale. It will create retails, restaurants, cafes and food shops
- Civic engagement:
  - Horslunde: A solid common identity has been developed along the city's commitment and civic engagement through the project “Energilandsby Horslunde”<sup>35</sup> where the citizens have invested in green energies and better insulation in their buildings.
- Education:
  - Fjordskolens: Renovation and transformation of the school in a flexible area not only for learning but also, for inviting to outdoor activities and education.



Figure 33: Fjordskolens project. Source: [www.realdania.dk](http://www.realdania.dk)

### *EU regional and social funds*

Even there is not any project in Lolland, the existing campaigns are targeted to Sjælland region and consequently to the development in Lolland (Erhvervsstyrelsen 2015).

- Business development:

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<sup>35</sup> Horslunde: an enegetic city

- Bussiness incubator in Nykøbing: the goal of boosting employment, and competent workforce what will provide growth and development throughout Sjælland.
- Education
  - Development of apprenticeship schemes in Sjælland region: promoting more internships in small and medium enterprises, based on companies' awareness of the shortage of skilled labor.

### Conclusion remarks

Lolland municipality is considered a peripheral area in Denmark and, after the analysis of indicators exposed before, is clearly in shrinkage. This phenomenon is not new in the municipality, and after the expectations, in demography terms, it will get worse. The main cause of this effect is the migration of young people from 18-25 years old and only around 18% come back to the municipality. On the other hand, migration change when it deals about older people who is coming back looking for peace and quietness.

From economic point of view, the average income and unemployment is lower than the Danish average and, together with the fact that the relative number of pensioners is higher, shapes a place where dependency of the state's help is completely necessary. Thus, national taxes contribute with the municipality to maintain the public services.

Agriculture is the main economic sector and industries are formed by little-medium size with 10 or less employees. One of the main economic trend is addressed to tourism where Lolland is developing new strategies and visions. Nowadays, Lalandia and Knuthenborg Safaripark are listed as favorite attractions in Sealand but, the lack of hotels and/or hostels in those areas preclude the option about overnight.

The main expectation in Lolland municipality is the creation of Femern Belt, which is one of the pillars of the development strategies. Its construction involves multi-sectorial business and the creation of employment. The main cities and the whole municipality are searching for visionary options for the creation of business, tourism and logistic opportunities, not only meanwhile the construction of the tunnel, but also when it will be finished.

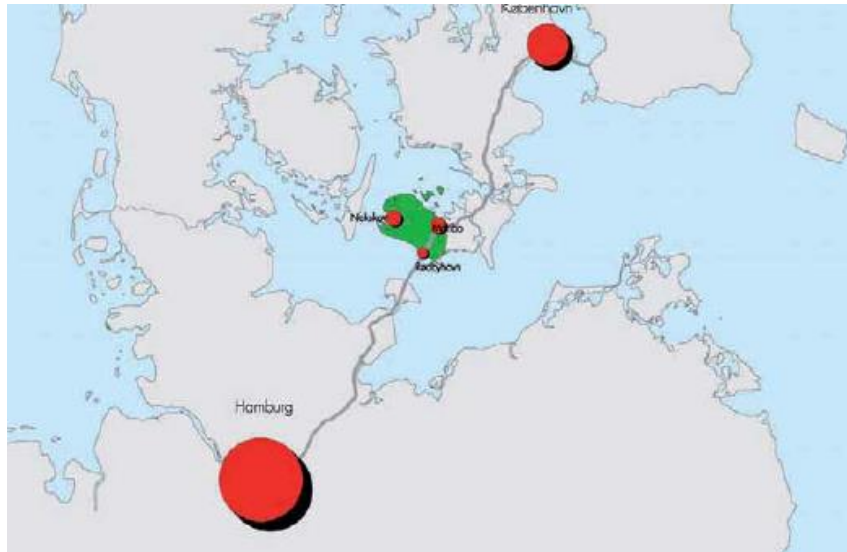


Figure 34: Creation of logistic centre in Lolland between Hamburg and Copenhagen. Source: Lolland Kommune, 2009; p.20

It is also important to underline, the boost of green energies investments what aims, not only an adaptation to the climate change, but also the creation of sustainable local business (private and public) through the promotion of involvement industries with farmers and inhabitants.

To conclude, a relevant remark about the municipality is that, even though the decline is present, there are also symptoms for growth and positive visions for the future. The development strategies aim to provide frameworks of core services and good life through the creation of employment and maximize the attractiveness of Lolland. To do so, the image of the place and the community involvement contribute to the positive evolution by the creation, for example, of partnerships:

- “Kærlighedsstormen fra Lolland-Falster”<sup>36</sup> what promotes stories, strengths and potentials in the municipality and forget the old stigmatization of the place.



Figure 35: Lolland-Falster Love storm partnership symbol. Source: <https://lollandfalsterlovestorm.wordpress.com/>

<sup>36</sup> Love storm from Lolland-Falster

- QLF (Quality Lolland-Falster) is a non-profit initiative that works to increase awareness of Lolland-Falster. The aim is to represent and make visible some of the many interesting women who have chosen to settle there and talk about their life on Lolland-Falster.

### 6.3 Bornholm

Bornholm is an island located in the most eastern part of Denmark, in the Baltic Sea and it covers an area of 589,16 km<sup>2</sup> (Noegletal 2013). The island has a coastline of 158 km and it is characterized by a great natural wealth. Bornholm is Denmark's most densely wooded, with third largest forest (Almindingen) in the middle of the island (Bornholms Regionskommune 2015).

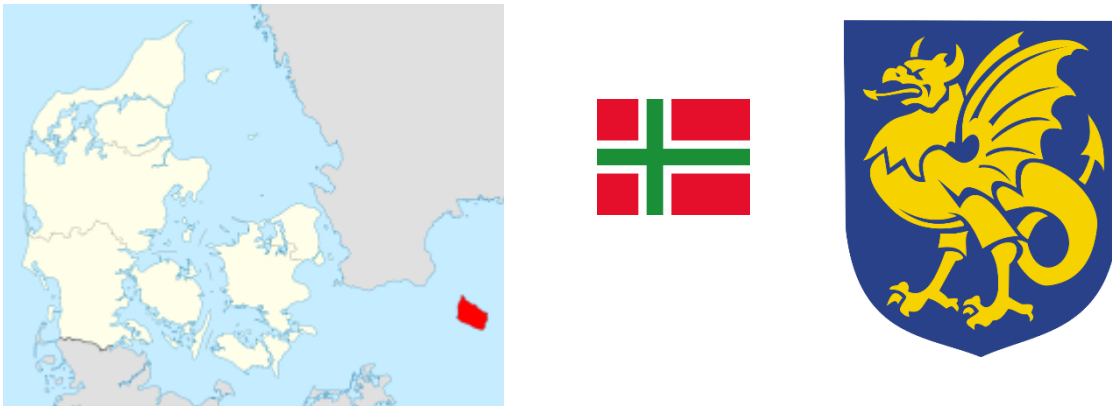


Figure 36: Bornholm situation map, unofficial flag and symbol. Source: [www.brk.dk](http://www.brk.dk)

The biggest towns on the island is located on the coast and have a harbor - with one exception: Aakirkeby. The greatest is called Rønne and then, the most important are: Hasle, Sandvig, Allinge, Gudhjem, Svaneke and Nexø.





**Figure 37: Cities in Bornholm. Source: De Bornholm sognekort (website)**

Tourism is the main business on the island which tradition of quality food. Other trends for its development are pigs, cereals and canned fish. The most challenged characteristic is the location, due to its isolation in the middle of the Baltic Sea. Therefore, transport and education are the issues more punished. Consequently, life is more expensive due to logistics for citizens and goods, and migration of young people to the big cities to study, are clearly a threat for Bornholm (Bornholm Regionskommune 2011). On the other hand, the distance to the rest of the country means that Bornholm in several areas is a self-supporting and self-sufficient island and, compared to the rest of the country, it is relatively well endowed with public service (Bornholms Regionskommune 2012).

Bornholm was hit relatively strongly by the economic crisis, and since 2007, total employment decreased by around 2,000 jobs. Thus, construction, commerce and transport were the sectors in decline. Over the past 10 years new jobs has been created within the Operational Services, Machine Industry and Healthcare, but on the other hand, many natives have been retired from the labor market what reduces its workforce, and can be expected labor shortages in a wide range of competencies. (Teknologisk Institut, Analyse og Erhvervsfremme - CRT – Center for Regional- og Turismeforskning 2013)

To resume, the three factors in which firms find barriers to develop are:

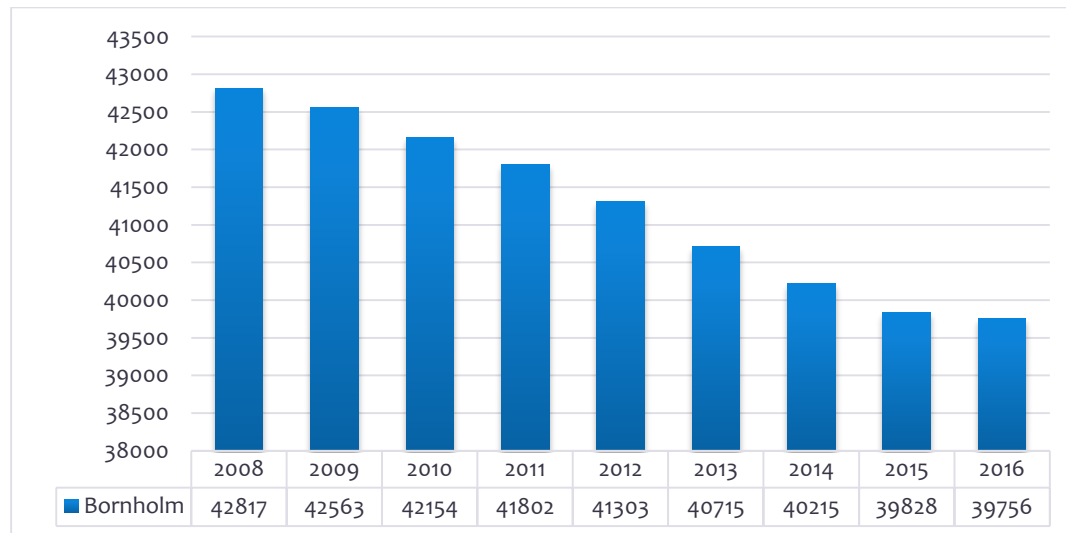
- A skills shortage: companies are reporting difficulties in recruiting workers with more specialized skills. A projection of the work-force balance point also labor deficit within a wide range of out-formation areas.

- Lack of risk capital: Public or/and companies find difficulties to invest in the municipality due to the high risk what this leads.
- Low demand: compared with similar companies in the country as a whole, productivity is also low and these two decline indicators leads to an uncertain development

The Growth Forum is in charge of monitoring the development conditions in concert with the municipal policies in order to counter this decline (Bornholms Vækstforum 2014) .

### Population development and composition

Bornholm has for years been characterized by population decline, and for the first time in 100 years has gone down from the “magic number” of 40000 in 2015. This number was consider a symbol of the fear (Ritzau 2014). As observed in Figure 37, the tendency in the last years analyzed, is clearly in decline with 8,15 % in 8 years.



**Figure 38: Development of population in Bornholm. Source: Author’s work based in Danmarks statistik**

The next table 5, shows the demographic changes in the cities where Rønne, the administrative center of the island, has lost only 2,05% of the population due to the magnetic effect that it exerts to the rest of cities.

Cities	2010	2016	Tendency
Allinge-Sandvig	1759	1560	-11,31%
Hasle	1741	1652	-5,11%
Svaneke	1120	1049	-6,34%

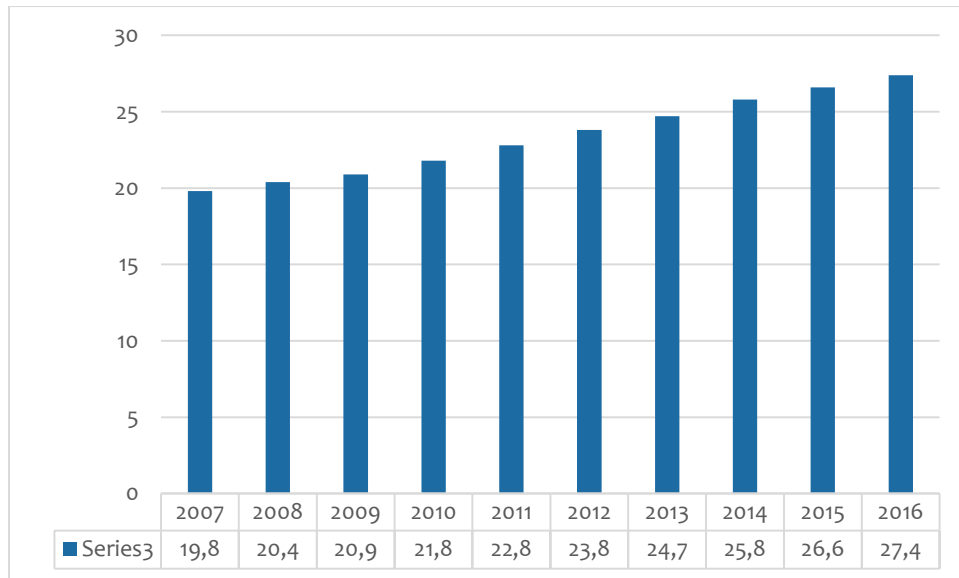


Årsdale	469	399	-14,93%
Aakirkeby	2090	2100	0,48%
Pedersker	250	246	-1,60%
Snogebæk	746	711	-4,69%
Nexø	3732	3647	-2,28%
Tejn	1047	912	-12,89%
Østerlars	281	236	-16,01%
Listed	237	213	-10,13%
Østermarie	496	485	-2,22%
Lobbæk	380	347	-8,68%
Nyker	742	699	-5,80%
Vestermarie	273	249	-8,79%
Klemensker	686	605	-11,81%
<b>Rønne</b>	<b>13924</b>	<b>13639</b>	<b>-2,05%</b>
Balka	265	222	-16,23%
Muleby	546	548	0,37%
Nylars	231	225	-2,60%
Gudhjem	754	710	-5,84%
No fixed residence	88	62	-29,55%
Rural areas	10297	9240	-10,27%

Table 5: Population and its tendencies in Bornholm. Source: Author's work based in Danmarks statistik

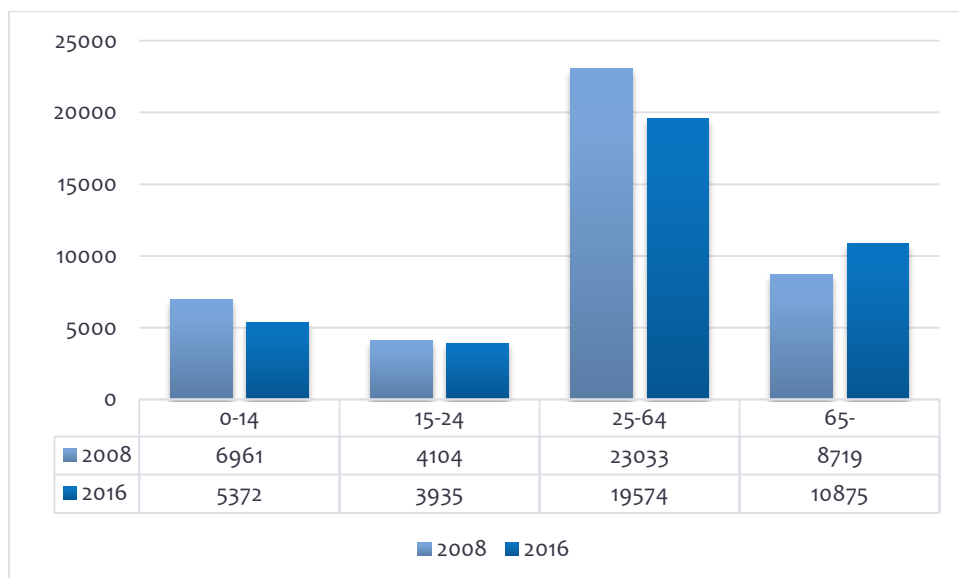
### *Population age*

The ageing in the municipality is raising in the last years, as it is possible to observe in the next figure. In the last ten years the percentage of people older than 65 years has increased from 19,8 % in 2007 until 27,4 % in the first period of 2016.



**Figure 39: Inhabitants older than 65 years (percentage).** Source: Author's work based in Noegletal, 2013

The next Figure 40 shows the population age structure where, as in Lolland, there are major shifts in population age structure towards fewer children and more elderly people, and these trends are expected to strengthen further in the coming years. In particular, there were concerns that the labor force appears to be reduced by another 4,000 people over the next ten years - unless it manages to attract new citizens of working age (Bornholms Regionskommune 2012).



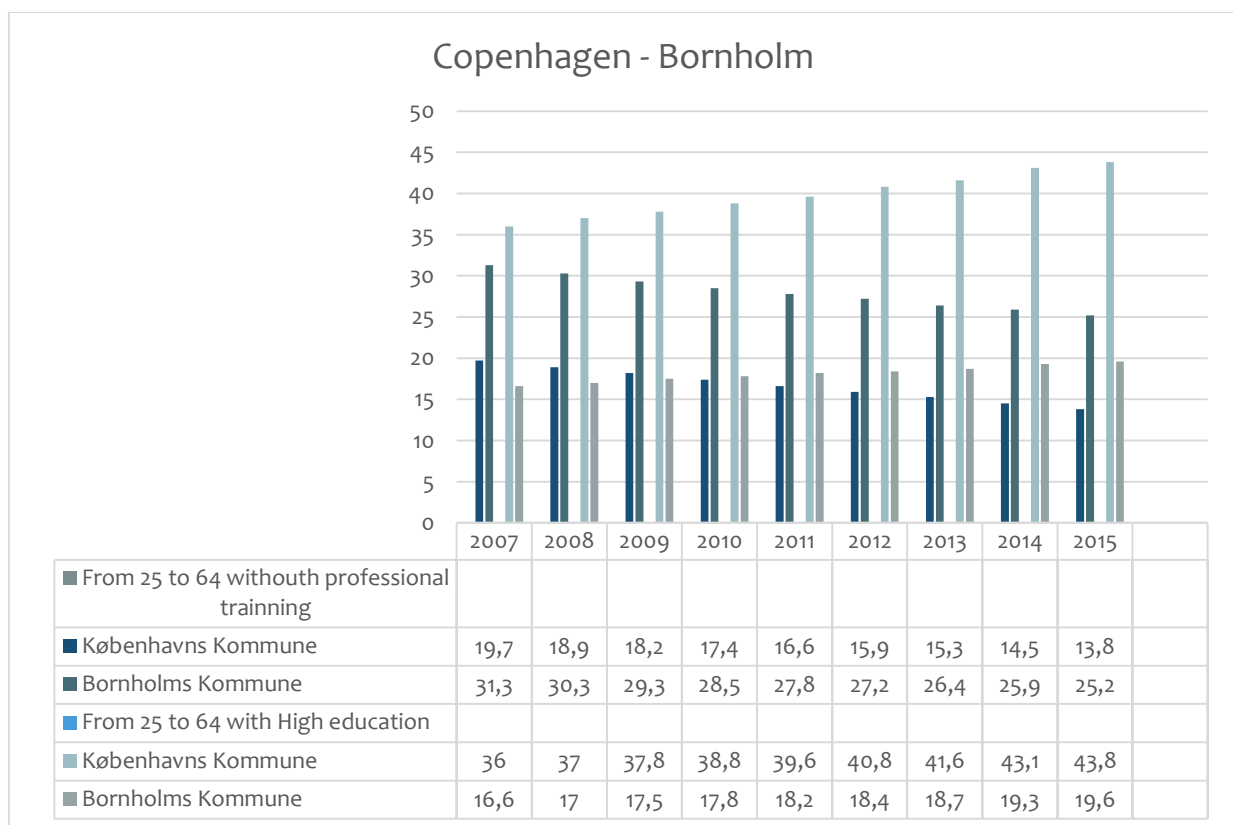
**Figure 40: Population age structure from 2008 until 2016.** Source: Author's work based in Danmarks Statistik

## Education Level

The analysis of the education level is, as in Lolland, studied in comparison with Copenhagen. Thus, the differences in this topic are more valuable due the importance of the low level of education and it is given less attention if it is rising or declining.

According to figure 41, there is a high quantitative difference between Bornholm and Copenhagen. Both municipalities are declining in percentage of people from 25 to 64 years old, without professional training but, the difference between both municipalities (in percentage) is the almost the same amount since 2007 until 2015 (around 12%)

The amount of people with high education is more accentuated. In the last 9 years, Bornholm has increased only 3 % of population with high education and during this interval Copenhagen has boosted in 7,8 %. Another important fact is the difference between both municipalities in the values from 2015 where there is a difference of 24,2 % of population with high education.



**Figure 41: Education level. Comparison between Bornholm and Denmark. Source: Author's work based in Nøgletal 2013**

## Economy

Until the early 1980s, there were economic balance on the island or, in other words, Bornholm was then a financially sustainable island based on the traditional industries such as fishing, agriculture and tourism. But Baltic Sea fishery collapsed in the early 1990s and the industry had to be rationalized and restructured (Bornholms Regionskommune 2012). On the other hand, Bornholm has a varied and diversified business composition, hospital, police, radio and TV region, variety of secondary schools and a narrower range of higher education cooperation with university colleges. There are stable transport all year by ferry from Køge and Ystad and Sassnitz in the summer months. Furthermore, there are flight departures to Copenhagen several times a day that adapt need over the week and year (Bornholms Vækstforum 2014) .

Even fast ferry relations have made it possible for many to visit Bornholm, the number of tourist nights on the island are still fallen. The main reason is that it has become attractive to hold more but shorter vacations and Bornholm as a destination has received considerable competition, particularly from Poland and East Germany. However, tourism has been for decades a very significant economic activity on the island and is today Bornholm's second largest occupation in relation to its economic importance (Bornholms Regionskommune 2012)

The industry has especially developed within food and crafts in local production. Also, Innovation and development of activities outside the high season like outdoor tourism - active holiday, arts and cultural events and other site bottoms quality experiences makes it possible to attract a variety of audiences and visitors at several times of the year (Bornholms Vækstforum 2014).

Bornholms Vækstforums<sup>37</sup> business development strategy for the period 2011-2014 entitled "Bright Green Island - Bornholm, a green growth island". The overall goal is increased value creation and more jobs. The business development strategy focuses on four strategic areas:

- Bornholm as Commercial Island
- Bornholm as educational island
- Bornholm as a green test-island
- Bornholm as experimental island

In these four topics is where it is pretended to boost the island through the development of the synergies among them and the design of methods for attracting employment

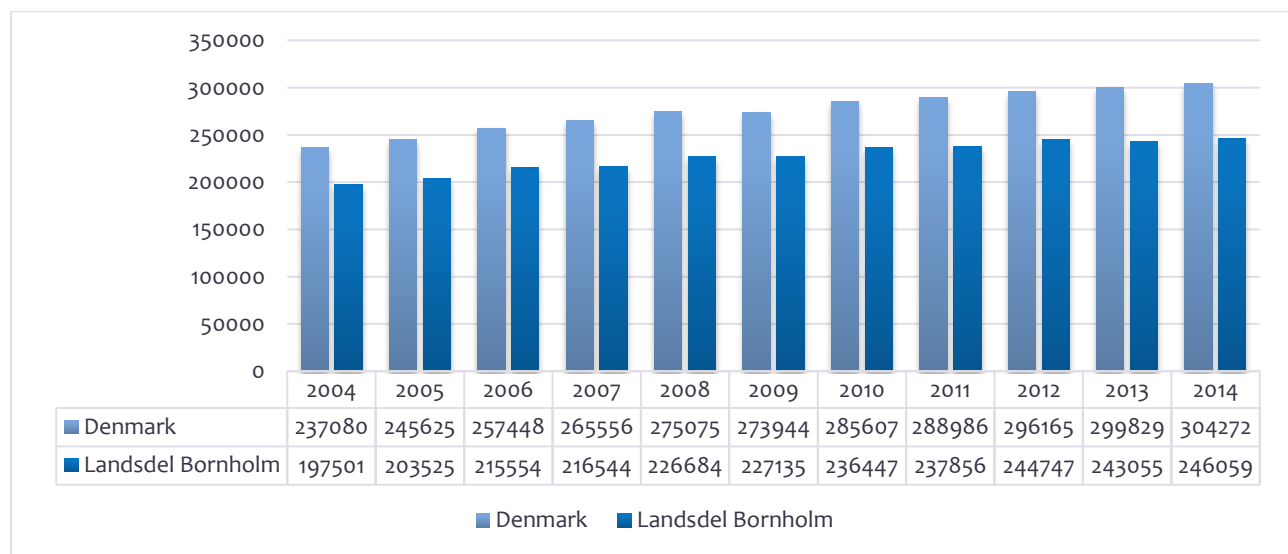
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<sup>37</sup> Growth Forum's

## Income level

The income level is analyzed in comparison with Denmark, in order to underline the differences between them. As it is possible to see in the figure 42, the monthly income level in Bornholm is around 18-20% less than the average in Denmark. Even there is a positive growth in the development, the salaries are low and the tendencies lines are in parallel in both Bornholm and Denmark, what induces to think the external influences in the data (globalization).

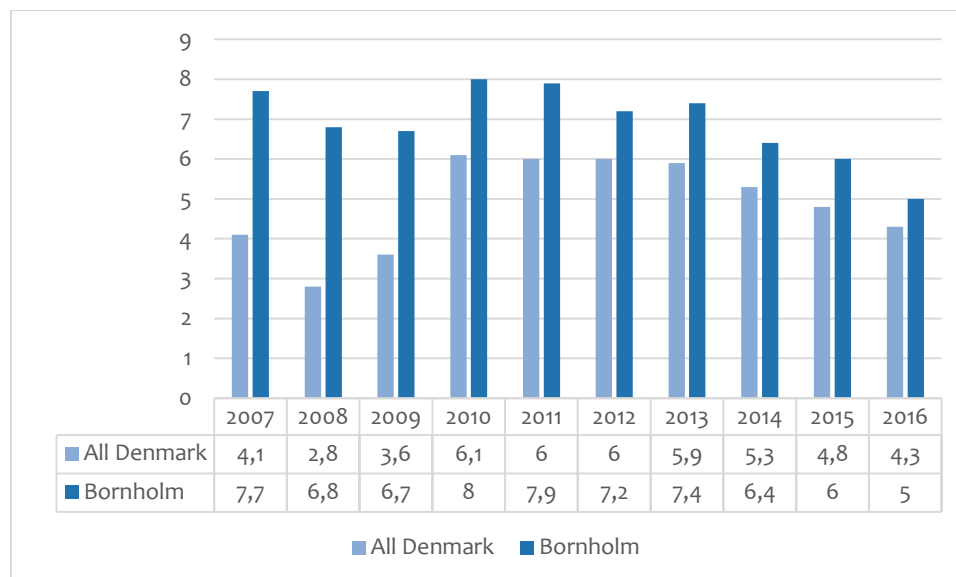
This fact affects the attraction of people to live in the municipality and also, it can be deducted from the figure the low level education in Lolland due to the differences in income among people with high and low education. However, workers perceived a stable and wages competitive wages. Municipal rates and charges for business are also competitive (Bornholms Vækstforum 2014).



**Figure 42: Average of personal income between Bornholm and Denmark (DKK). Source: Author's work based in Danmarks Statistik**

## Unemployment

The unemployment is also analyzed in comparison with Denmark, in order to underline the differences between them. Bornholm reached the maximum rate in 2010 with 8 % meanwhile, Denmark reached in 2010 with 6,1%. Since 2014, the decline in both cases, begin to appear until February 2016 where Bornholm has 5% and Denmark, 4,3%. As analyzed before with the income level, the tendency lines are parallel in both cases.



**Figure 43: Unemployed population (seasonally adjusted - February) by actual figures, region and time. Source: Author's work based in Danmark Statistik**

Anyhow, the global economic crisis clearly affected the employment in Bornholm, but as commented before, Bornholm represents one of the seven rural areas with less rate of unemployment due to the strength of its local economy what is more independent than other areas in the periphery.

In a quantitative comparison with the demographic trends, the impact in the workforce is relatively high. In the next figure, it can be seen that the largest group of workforce between 30 and 64 years, until 2008, embraces over 50% of the population, it is accounted in 2020 to 44% and continues to decline, so that in 2030 represents less than 40%. At the same time there is an increase in the proportion of over-65s, while the 0-17-year-olds from a share of over 20% in 2008 to just under 16% in 2020. The small group of 18-29 year olds represent a share of approximately 9% in the same period with a slight downward trend.

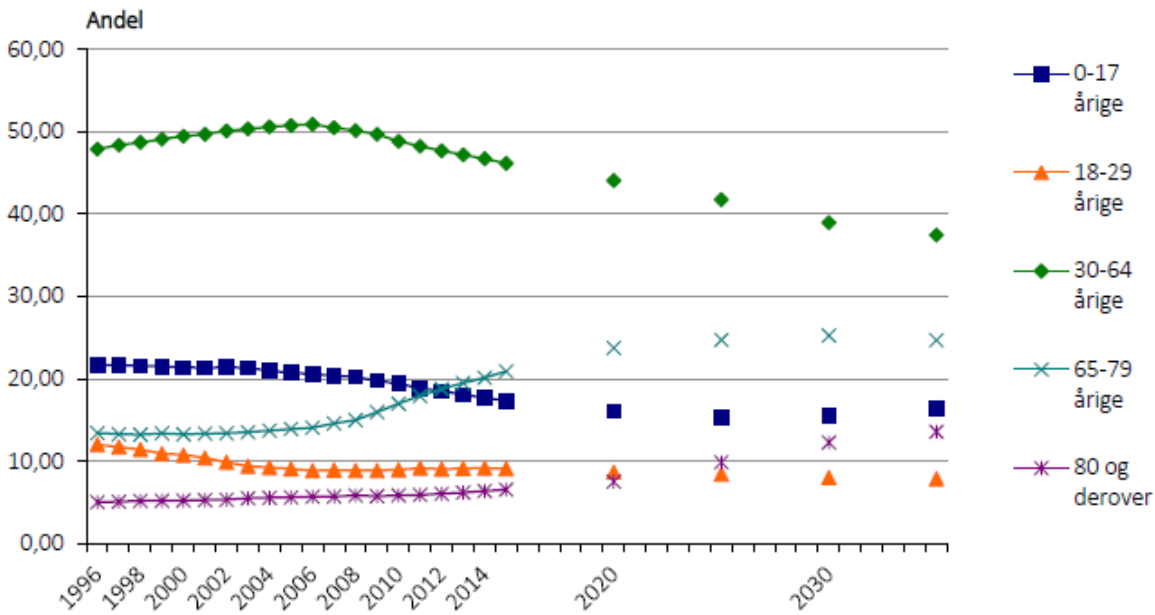


Figure 44: Population by age group. Source: Schønemann, et al., 2014

## Peripherality

According with the typologies of the Danish land districts, it is made the next figure to classify and verify Bornholm as peripheral area:

TYOLOGY MADE BY	BORNHOLM
Realdania	Peripheral
EU structural funds	Peripheral – Land district
Danish Ministry of Food, Agriculture and Fishery	Peripheral
Economic Council of the Labour Movement	Peripheral - Lower index
Ministry of Housing, Urban and Rural affairs	Peripheral

Figure 45: Bornholm and peripherality. Source: Author's work

## Strategies and development plans

Bornholm is one political and administrative unit, with regional and municipal competence in important areas what covers the regional and municipal development plan for Bornholm. Thus, the interaction

between the visions and objectives of the development plan are more direct and simplified (Bornholms Regionskommune, Teknik & Miljø 2012)

Bornholm development plan have three different elements due to it is a regional-municipality. It concerns to political and administrative decisions and to ensure that there is consistency when finances resources and tasks must be prioritize in regional and local level. Bornholm development plan includes, among both the regional development plan, municipal strategy and the Local Agenda 21 strategy. These three documents reviewed / prepared every four years, and the proposals to be published in the middle of the election period (Bornholms Regionskommune 2012).

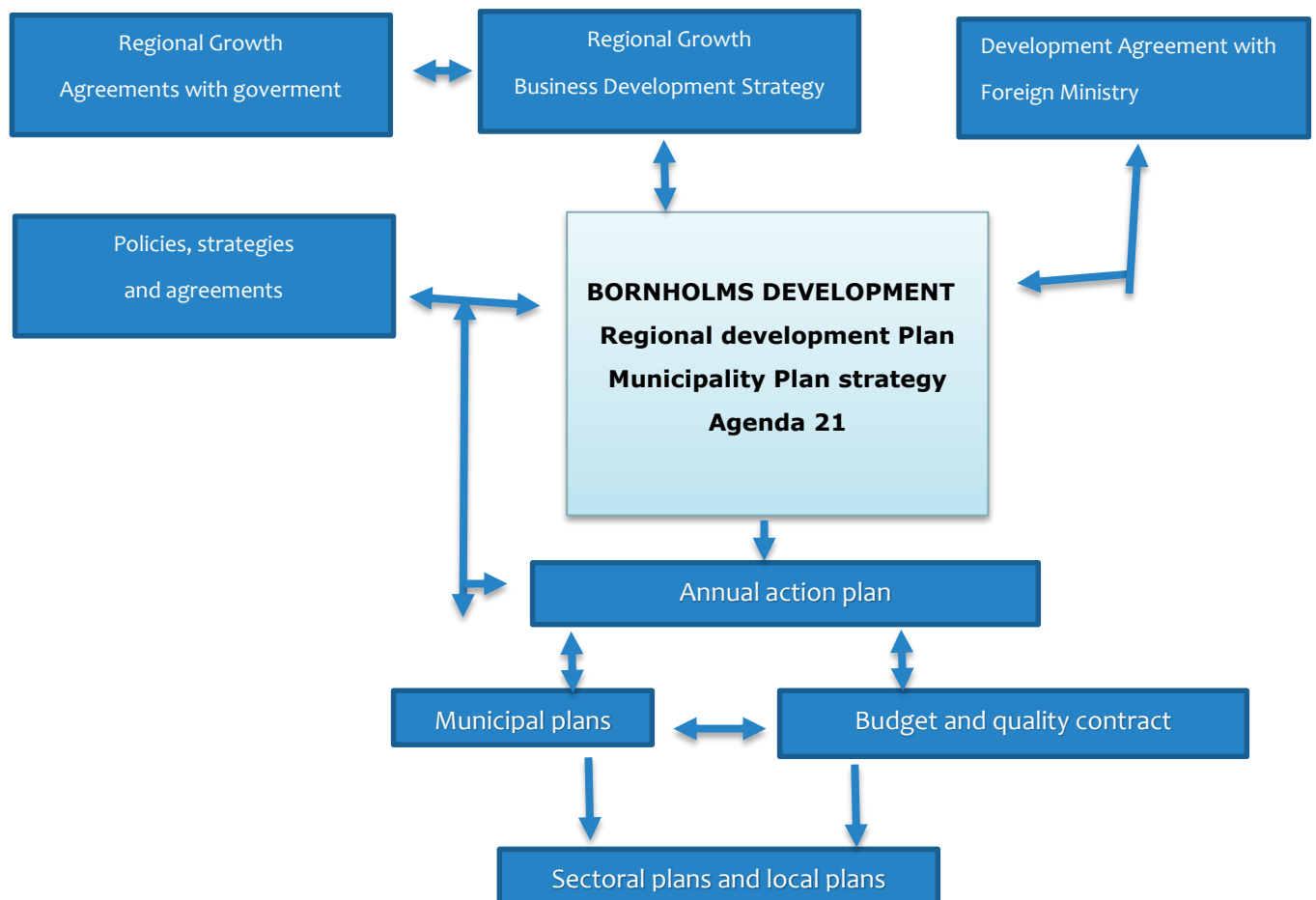


Figure 46: Relation of planning parts and procedures. Source: Author's work based in Bornholms Regionskommune, 2012

The business development strategy is prepared every four years by the Bornholm Growth Forum. This means that businesses, educational institutions, social partners and the local council jointly determine objectives and priorities for business development. Growth Partnership Agreement contains the themes



that the government and the Bornholm Growth Forum have agreed to focus on. The agreement is revised every year.

Bornholm development plan includes, among both the regional development plan, municipal strategy and the Local Agenda 21 strategy. These three documents are reviewed / prepared every four years, and the proposals are published in the middle of the election period.

The annual plans will contain descriptions of the concrete tasks and initiatives to put into action in order to meet municipal desires and goals in development.

The municipal plan, which is also revised / compiled every four years, is based on the municipal strategy and the regional development. The proposal must be published immediately before the municipal elections, and typically will it be the new municipal council to adopt the plan.

The municipality's budget adopted each year for the coming years incl. a three-year forecast period. The budget contains objective, scope and economics for municipal business (Bornholms Regionskommune 2012).

The visions and policies are distributed by topics, as it is possible to see in their website:



Figure 47: Distribution of policies and vision through internet. Source: <http://bornholm.dk/>

Thus, in a friendly structure, it can be analyzed the main trends of development in the island where they have place in their own website.

With the same structure as what it has been exposed before in Lolland municipality, it has been chosen those strategies which could affect to counter the decline and they have been structured depending on the topic:

### *Economic policies*

The strategy for business on Bornholm is integrated in Bornholm Development Strategy (BUS), which is focus on the softer aspects of the framework conditions for business development, such as leisure, culture, sports and athletics, health, school, day care, etc.

As commented before, Bornholm Growth Forum has targeted missions within the business environment in which the cooperation between prioritization, investment and learning are connected to business, education and investigation institutions for the benefit of the municipality (Bornholms Vækstforum 2014). On the basis of this cooperation is the municipal council's mission to establish more cooperative relations between local businesses, university with a research environment. Moreover, in the municipal council, the objective the establishment of closer links between primary schools, secondary schools and the business community (Bornholms Regionskommune 2012).

The strategic business areas in which Bornholm focus its development are (Bornholms Vækstforum 2014):

- Service and production companies:

The fundamental challenge is to make the market attractive for especially small businesses where the cooperation among them could make them bigger in order to compete outside the municipality. To do so, the investment in recruiting trained and skilled employees is essential due to the proved development what brings to the companies.

- Tourism:

The strategy is based on the general upgrading of accommodation offers, restaurants and infrastructure, with special strategic focus for ensuring that the revenue from tourism industry (attractions, accommodations and restaurants) will increased by at least 10% of the strategy period maturing in 2020 (compared to 2015).

The impact of this sector in the whole economy of the island is very high due to the narrow relation what has with others as restauration, hotels, shops or museums. Therefore, this fact implies to the global employment of the island what results to be more diversified.



Figure 48: Hasle beach. Source: Own source

Among the initiatives of development, it could be underlined two of them. On one hand, the impulse of the creation of an “outdoor center” (Outdoor park Bornholm) in the whole island where it supports commercial and cultural events by establishing sustainable tourism as for example, the development of a nature park and include Bornholm in the list of world heritage performed by UNESCO. On the other hand, the establishment of modern digital infrastructure for tourism information and structure the possibilities for tourist to make them more accessible and attractive.

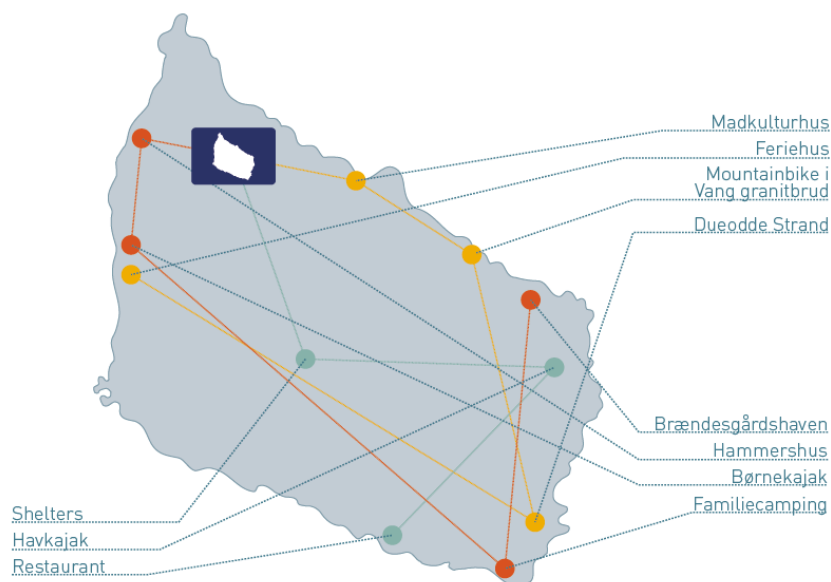


Figure 49: Bornholm outdoor promotion. Source: Partnerskab for Østersøturisme

- Food market

The development of the regional food culture in Bornholm in the last years has turn to focus on quality and food craft with modern trends. Besides that, traditionally the island is known for the pig production and dairy products what is exported to the whole country.

Even, these industries consists in a very small business and they are challenged by external influences due to the globalization, the strategies are focus in strengthen the quality of the products aimed to the gourmet area, new tendencies of sustainable food and development of the production of these unique products.

Moreover, another important topic embracing the economic policies, is the social inclusion. These policies prepare companies to receive people with risk and prepare vulnerable people to work in a company. The interventions may also include resource clarification process and testing of models in social inclusion (Bornholms Vækstforum 2014).

### *Population development*

The implications for the living conditions in the island are closely related with the population development due to the consequences that implies to the public services to the inhabitants and the impact to the local economy.

The attraction of people to Bornholm is announced in the official web site *flyttilbornholm.dk*<sup>38</sup> where it is offered information about job, housing, education, youth opportunities, culture and leisure. The web site provides also a counselor to help people to find job and the settlement in the municipality (see appendix 2). Through the strategic vision "*Et godt og aktivt liv for alle*"<sup>39</sup> is pretended the fascination for the island with the promotion of its welfare, work and leisure life and security and health, career development opportunities and municipal services (Bornholms Regionskommune 2012). Among others the targets are:

- The municipal council will support, that there are also offers of culture outside the tourist season.
- The municipal council will help to initiate and motivate children and youth to physical activity, including physical activities as a natural part of daily school life.

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<sup>38</sup> Move to Bornholm

<sup>39</sup> A good and active life for all

- Region municipality's sports policy must contribute to all citizens - regardless of disability or age - are encouraged to participate in sporting activities with the aim to strengthen citizens' overall health.
- The municipal council will develop sports tourism, which may help to extend the tourism season and market Bornholm to new audiences.
- The project for the elderly "Simplification on the Move" should be disseminated to both psychiatric and children and schools. The project is among other things, to remove unnecessary documentation and control in order to improve the service that citizens are experiencing.
- The municipal council will continue its efforts to expand and improve access to recreational areas all over Bornholm.

### *Education*

The strategy for growth and development on the island is based on the activities that can enhance the management and employee skills through specific courses, training and recruitment of skilled labor from the rest of the country or from abroad. The initiatives are aimed at Bornholm companies with growth potential, with the aim of improving competitiveness - especially with increased innovation and export purposes.

The initiatives performed to boost the education are (Bornholms Vækstforum 2014):

- *Uddannelse til alle*<sup>40</sup>: It is targeted to impulse the Bornholm youth habitants to participate actively in the labor market. The overall project goal is that 95 % youth people must be prepared to job through a secondary school and 60 % them must complete higher education.
- *Adgang til kvalificeret arbejdskraft*<sup>41</sup>: The size and composition of the Bornholm workforce in conjunction with education and continuing training on the island is a challenge when companies need to ensure access to the right skills. Thus, it will be strengthen the interdisciplinary cooperation by supporting the further development of business-oriented focus of competence effort and through a better framework for coordinated enterprise-oriented efforts.
- *Bedre muligheder for videreuddannelse på Bornholm*<sup>42</sup>: The maintenance of a provision of higher education, social and health education on the island is essential both for the island's student population and for reasons of social access to skilled labor. Bornholm youth, adult, long- and

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<sup>40</sup> Education for everyone

<sup>41</sup> Access to skilled jobs

<sup>42</sup> Better options for long-educations in Bornholm

continuing education gathered in the Campus Bornholm, aim to develop a framework for education programs and maintain the educational environment.

- *Erhvervsuddannelse og videregående uddannelser*<sup>43</sup>: Growth Forum aims to increase the number of people with vocational training or higher education. The target audience is partly young students, and partly adult unemployed and employed.
- *Tilflytterservice*<sup>44</sup>: As commented before in the website *flyttilbornholm.dk*, the aim is to strengthen the Bornholm industry's ability to attract qualified people outside the island and, therefore to attract new jobs, by establishing a newcomer service targeted three target groups: qualified labor in general, small businesses with few or no employees, and entrepreneurs. The service must ensure that each new citizen is integrated into the Bornholm community as a whole.

### *Housing policies*

The demographic changes and family structure evolution in the last years reflects to the fact that housing needs change, because there have been fewer families with children, and also more elderly and more singles. From another point of view, the increased standard of living has led to increased demands for both living and housing standards. The local council wants the buildings construction characterized by high standards, adapted to the urban environment with focus on architecture, the environment, energy considerations and availability. This particular support the municipal vision of Bornholm as green and sustainable island (Bornholms Regionskommune 2015).



**Figure 50: Sommer houses in Vang. Source: Own source**

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<sup>43</sup> Vocational training and higher education.

<sup>44</sup> Welcoming service

Therefore there will also be new housing, because the existing housing stock can't always meet the changing needs. Since the negative population development on the island is expected to continue over the next year, there is a risk that more homes are left over - to the housing stock exceeds the needs that are in the future (Teknik & Miljø i Bornholms Regionskommune 2012).

From another point of view, the houses in Bornholm have an essential impact on how the municipal board's vision and an economically sustainable island can be met. The supply of second homes, for example, contribute to the attraction of new migrants, but in recent years it has been necessary to look more flexibly to the dwellings use, avoiding empty and unoccupied dwellings. It is expected some changes in the planning law, but it is not decided yet (Bornholms Regionskommune 2015).

### *Bright Green Island*

Bright Green Island is the vision of a 100 % sustainable and CO<sub>2</sub>-free society by 2025. It aims to a society that creates sustainable and environmentally friendly local solutions, growth and new business. A society showing the world how it is possible for a small island to make educated attack on pressing global challenges such as resource scarcity and the greenhouse effect (Bornholm 2013).



Figure 51: Bright Green Island action schema. Source: Bornholm, 2013



Bright Green Island vision has four main topics but all of them are connected: Sustainable Business, The Good Life, Green Technology and Natural Destination. The aim is to embrace every sector in the economy and the society to create a new identification to the island.

### Network and partnerships strategies

As it was performed in Lolland, in this section, it will be pointed up the campaigns introduced in the chapter 5.4 by those network-partnerships what aims the development of Bornholm.

#### *Realdania as partner*

The Regional Municipality of Bornholm in cooperation with Realdania and Bornholm citizens, businesses, organizations have created a vision plan for Bornholm's future, which could provide a realistic starting point for the island's development in a time of settlement. There are 14 projects and these are examples of them:

- Touristic- cultural impulse:
  - Rønne Theatre: Rønne Theater was built in 1823 and it is the oldest working theater Bornholm. The project consists on the establishment of a new wing in the theater's courtyard. The project has also contributed to the theater not only as one of the island's cultural cornerstones, but helps to strengthen and renew the entire city's cultural life.
  - Hasle Havn: The transformation of Hasle Harbour has made an unused port to an urban space by connecting existing activities and create space for new ones. It is a part of the campaign called Mulighedernes Land.



Figure 52: Haslev havn project. Source: [www.Realdania.dk](http://www.Realdania.dk)



- Sandvig promenade: In Sandvig is the old boardwalk from the early 1950s turned into an attractive outdoor spaces. The long promenade is covered with black and light gray asphalt that runs in undulating surfaces along the promenade. A 160 meter long bench follows the coastline all the way along the beach. The seafront already provide a framework for local activities in Sandvig. It is a part of the campaign called Mulighedernes Land.
- Melstedgård: The project's goal was to develop a regional and tradition based center for food culture and food on the island. Melstedgård have become Denmark's first regional madkulturhus: A culinary meeting point for island residents and guests who meet food culture through the taste, play and production.



Figure 53: Melstedgård. Source: Bornholms Landbrugmuseum

○ Spatial transformation:

- Ny bymidte i Østermarie: In Østermarie, the conversion of the city center was old and unused properly. With few resources as a new car park area, it has today become a nice residence with room for market days, festivals and everyday meetings. Around the square there is both a cafés and supermarkets. With the transformation of the city center in the Baltic Marie pulled the life of the four houses on the square, so that life in the city becomes visible to the citizens themselves and for those who pass through the city.

- Education:
  - Rønne Vandtårnet: The old water tower on Torneværksvej in Ronne is now renamed as Waste Tower. The water tower has been renovated and furnished for informational and educational center on waste and environmentally waste management. Here, school classes, kindergartens, community groups and other stakeholders gain knowledge about the environment and resources and learn to sort the Bornholm waste properly.
- Environment:
  - Green solutions house: With Green Solution shows you the latest developments in sustainable building and thus new avenues of work to make the building both more green and sustainable. It presents the latest developments in sustainable construction and has become the Hotel Ryttergården in Ronne on Bornholm. Here, professionals, tourists and local residents enjoy the green solutions.

In the research, the Realdania campaigns are targeted mostly to improve culture activities and tourism but it should be analyzed as a holistic form to boost the island, due to the connections what these sectors have with the indicators studied in the shrinkage dynamics.

### *EU regional and social funds*

As it was observed in figure 17, there are four projects with these type of funds undergoing in Bornholm targeted to (Erhvervsstyrelsen 2015):

- Education:
  - Ungeguide: The target group is young natives who experience barriers relation to school education and / or work. This project is a phased preparation course to help the young people to attract them to study longer. Ungeguide is an available offer in secondary education, where the young people can find guidance, support and overview of opportunities.
  - Vækst og viden: The project has external focus on providing skills development (courses, seminars, counseling, etc.) based on the companies' needs and requirements. There is a process in which there is a need to follow a group of companies over a longer period, with the aim of supporting the new competencies also be implemented in the company's operations.

Internally, the project's focus is to improve coordination between the business-oriented efforts in the business frame, employment and education.

- Employment:
  - Fødervarer: Establishment of a partnership between Gourmet Bornholm - part of the regional food culture, Bornholm Agriculture and Regional Municipality of Bornholm, as the core of a new strengthened and formalized food cluster. A cluster that together will have a variety of skills for the benefit of the companies where the aim is to create innovation, development, growth and employment.
- Growth:
  - Innovativt digitalt strategiudviklingsværktøj: The aim is to build the prototype of an innovative digital strategy development tool that can help more to get access to startup management and decision tool. A digital management tool that can support managers in strategy development and effective implementation of the decisions and implementation of the strategy.

### Conclusion remarks

Bornholm region municipality is certified as peripheral area for every organism what designate the typologies of places in Denmark. Besides that, all the indicators exposed before (population, education level and economy) can confirm the decline of the island.

The geographical context provides negative barriers for its own development where the logistics and education represent the main punished indicators. Consequently, the demographic changes can be clearly seen due to the migration of young people to study and settle in the main Danish cities what produce a decline in number of population every year in the island.

Even there is small-medium industries related to food (fishing, pigs), the main economic engine is the tourism. It will be from this sector, where almost all the strategies are addressed to boost the municipality, from the creation of jobs and attract people.

However, strategic plans aim an adaptation to this reality by enhancing the resources. For example, the promotion of cooperation among the existing business to getting bigger and compete with outside firms to introduce their products. The food is one of the main attractions to the island due to its quality and, therefore, a gourmet trend compound by autochthonous delicatessen products is being developed.

As commented before, the education is one of the “black spots” in Bornholm, and therefore there are many strategies targeted into this sector. Thus, the municipality establish some action plans to promote longer educational systems and direct cooperation with the business sector what is demanding skilled worked force.

Additionally, there is a branding strategy in Bornholm what aims the identification of the island with nature, down-to-earth values and nature. This vision is connected to the Bright Green Island what, in a holistic way, try to achieve to join synergies between sustainability and life in the island.

## 6.4 Case studies comparison

As tool of the analysis, the comparison of the municipalities Lolland and Bornholm, brings into focus similarities and contrasts between them. In order to organize the analogies, the structure of this subchapter, what entails the characterization made above for both cases, follows the next statements:

- Shrinkage dynamics: It involves the causes-effects of the decline under the indicators studied in both cases
- Strategies and visions: It requires the description of the strategies to tackle the decline in the municipalities by pointing up the areas/sectors in which the cases decide to boost the place.

This chapter structure is chosen following the logical design of the thesis and the research questions (see appendix 3) where the dynamics of the phenomenon are analyzed in first place (theoretical and in a Danish context) and the action of the planners and policies to tackle the decline is in the second. The evaluation of the comparison explained above doesn't follow the structure of the indicators as it was considered in the case study sub-chapters. The synergies in between them will produce a better understanding to the reader of the indicators interconnectivity for the decline development

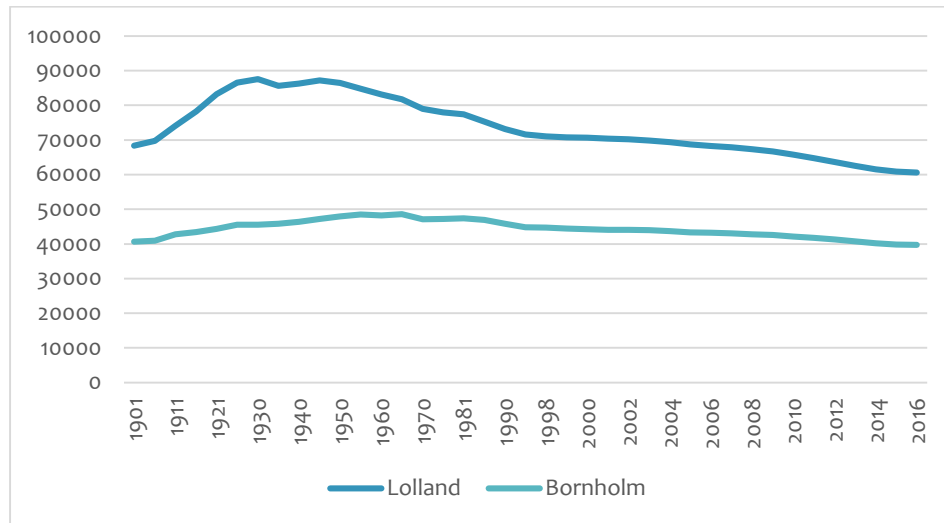
### 6.4.1 Shrinkage dynamics

When investigating shrinkage cities, as commented above, the contextualization of the place is necessary in order to understand the causality of the phenomenon. Lolland and Bornholm are both Danish islands considered as peripheral areas, where it is clearly visible the transformation in every indicator of shrinkage investigated in this research.

Lolland is affected by population loss since the 50's when a change in the production system (helped by the Marshal's plan) of the agricultural sector caused a modernization of the patterns of the workforce. This development provoked that less people was needed and the migration began to appear. On the other hand,

Bornholm have suffered mostly the decline from the end of the 90's and the economic crisis in 2007 because its economy was not agricultural based.

Fishing, commerce and tourism were the main economic focus, due to the strategical location of the island (even this fact can be seen also as a stagnation due to the distances to the main cities). Thus, changes in a higher level (globalization) transformed the system structure.



**Figure 54: Comparison of population developments in Lolland and Bornholm. Source: Author's work based in Danmarks Statistik**

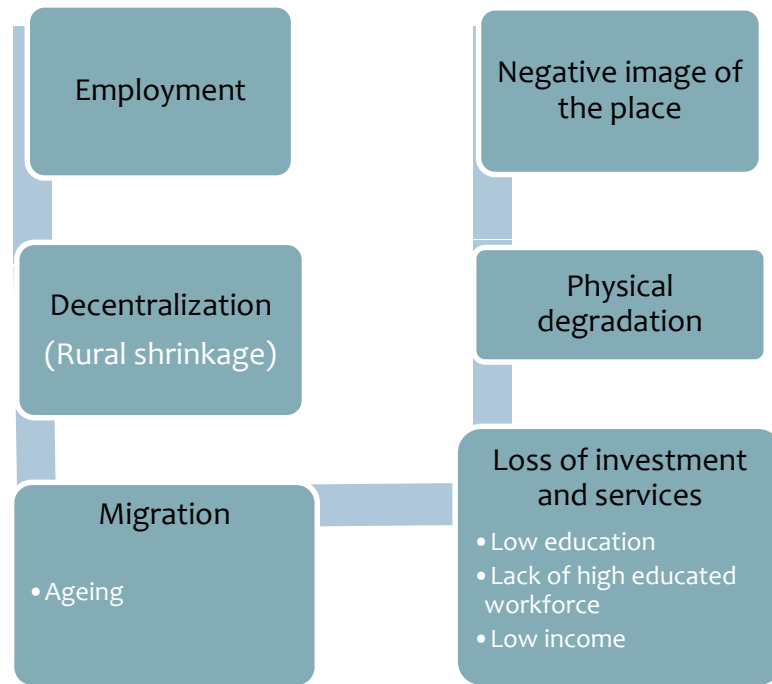
The agricultural sector continues being the main economic engine in Lolland but, due to the location in between Germany and Copenhagen (and consequently the other Nordic countries), the development of new possibilities for growing thanks to Femern belt, make real the possibility of enlarge the production system in the municipality and increase the number of jobs.

In Bornholm, fishing sector collapse in the 90's fomented not only the decline of workforce in this area, but also the commerce of its products. Nowadays, the economy turns also around food a tourism and the interrelated areas (service sector).

In both places, there are similarities in the low education level and consequently, low incomes. These indicators represent an economic model in which the period of transformation and adaptation to new technologies is still happening and are signals of the decline cities.

To resume and, as expected, the dimensions analyzed has decline values. The de-industrialization suffered in Lolland is connected with the globalization of the economic sector affected in Bornholm. This fact, as

explained in the theoretical chapter, is linked to a dis-urbanization and an economic decentralization what, in these allocations where there was a mono structural sector and their economy is affected by exterior agents, provoked a population fluctuation. Therefore, the economic changes in both cases leads to a decline dynamics what can be schematically analyzed through the next figure where it follows the chain of the decline development:



**Figure 55: Shrinkage dynamics in Lolland and Bornholm. Source: Author's work based**

## 6.4.2 Strategies and visions

The strategies to counter the decline in our case studies depends on the context values of the place which, the search for adaptation to the economic trends are essential. In this sense, policies aim the development of the area through boosting the indicators of the decline exposed above.

Firstly, the main difference between both cases is the competences to carry out the implementation of the policies. Bornholm is a regional municipality and, consequently it has roles and tasks in both levels, meanwhile Lolland only have municipality characterization.

Secondly, and as it has been above in the shrinkage dynamics, the similarities in the indicators of the decline lead also to related visions for growth:

Challenges	Lolland	Bornholm
<b>Bussiness attraction</b>	Energy Cluster Lolland Gateway North Femern tunnel	Market attractive Tourism Outdoor center Food market
<b>Education</b>	Health and Welfare Economy and tourism Climate and Energy Transportation and Logistics	Uddannelse til alle Adgang til kvalificeret arbejdskraft Bedre muligheder for videreuddannelse på Bornholm Erhvervsuddannelse og videregående uddannelser Tilflytterservice
<b>Housing</b>	Demolition funds	Improve building standards
<b>Environment</b>	Bright Green Island	In relation with other dimensions
<b>Image of the place</b>	Love the place	Unique and promote identity

**Table 6: Strategies and policies comparison between Lolland and Bornholm. Source: Author's work**

### *Economic policies*

The business attraction seems to be the root for tackle the shrinkage in both cases but the strategies vary depending on their own circumstances:

In Lolland, agriculture is the most important economic sector but, firms don't precise many workers to fulfil their demand and besides that, the workforce is not very qualified. Therefore, the employment rate is higher than the average in Denmark and income level low. The boost in the economy turns into logistics green energies where the construction of Femern Tunnel is the main focus. The tunnel will connect Germany with Denmark (and the Nordic countries) and the development of the surrounded areas is trying to "catch" people by offering activities (race circuit) or a transport center. Besides that, tourism is another sector where Lolland tries to prioritize by the construction of hotels close to the safari and the promotion of Lalandia.

On the other hand, tourism in Bornholm is the main sector, besides the food industry although they are interconnect. The investments in the infrastructure of the island will provide not only better accommodations to the tourists, but also an improvement to logistics inside and outside the island. The target is attraction of tourist interested in outdoor sports, quality food and cultural environment, so the market is diversified.

## *Population development*

As observed in the figure 54 about the population development comparison in between both municipalities, the decline in Lolland started before than in Bornholm due to the mono-structural economy sector in Lolland. The loss of jobs in the agricultural sector in the 50's led a migration to other municipalities but in Bornholm, where the economy was more diversified, the unemployment came later.

Thus, in Lolland, the attraction of people turns around the construction of Femern tunnel in which not only is expected the arrival of workers to carry it out, but also the settlement down. Therefore, strategies as "Bliv lidt længere" aims the migration when the construction is over. Besides that, the creation of networks to attract business is in primary focus due to the direct relationship between these indicators.

The strategies directly related to population development in Bornholm entail an important promotion of the place where "Et godt og aktivt liv for alle" is in the center of the planning. Within this vision, the island is announced as an opportunity place to live by enlightening the boost of outdoor activities in a unique place and climate for young and elderly people.

## *Education*

In both municipalities, the education level is low and the main activity is the support of the networking among firms related to logistics, health or green climate, among others, in order to bring closer firms and educational institutions.

Therefore the creation of educational atmospheres will provide a prepared workforce in the sectorial areas where the demand of high education is required. From another point of view, the migration of young people can decay due to new possibilities for creating a future in those municipalities and, at the same time the income level can raise.

## *Housing policies*

The effect on housing in shrinkage municipalities is related to abandon buildings which can be seen in a private or public scope. In Lolland, there is a need to reuse those institutional buildings where, as consequence of the structural reform, are empty but with high maintenance costs and the effects of migration provoke the deterioration of living houses.

On the other hand, in Bornholm, the effects of the structural reform are not visible due to the special governance characteristics what entails regional and municipal duties.



In order to revitalize abandoned places, planners try to create new recreational spaces for public use through “consolidation” of parcels where it is created a negative image of the place. On one hand, the strategies in Lolland, with help of national funds, aim to the demolition of the private empty buildings because they are old and the costs to repair them are more expensive than to tear them down. On the other hand, in Bornholm, the buildings are conserved better and it is preferable to fulfill the regulations through reforms.

### *Others*

There are campaigns driven by networks among firms, associations and upper levels (European or national funds) what are targeted in the development of the peripheral areas in Denmark. These partnerships are in direct connection with the municipalities and they are involved not only in the analysis of the problematic of these areas but also in the refurbishment of buildings or boosting the economy.

In both municipalities, there are campaigns, as explained before what focus mostly in the improvement of the image of the place through revitalizing areas (spatial transformations) for touristic, educational purposes and the development of green energy on the island.

Another essential factor for the growth of these municipalities is to eliminate the negative perspectives and marketing that those areas receive from Medias. The creation of networks among the citizens create a civic engagement that aims to improve the image of the place by sharing experiences to show the areas and activities.

## 7. Discussion

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### Shrinkage dynamics

The characterization of the shrinkage phenomena, within its own conceptualization, embraces the research of the dynamics, in order to understand a holistic approach of the places where the decline is undergoing. This transformation is multidimensional and affects not only the population of those cities, but also the economic, spatial development and the policies. It is also suggested that decay problems are not only linked to the question of how many people are living in the place, but also, the resources they have.

Therefore, the complexity in the concept arises from the inquiry of the decline cities because the causes what provoke the decay lead to different impacts. Thus, the analysis of the shrinkage dynamics are essential to evaluate the origins and evolution of those places.

Besides that, another important variable to include is the context. The investigation of the background of the city provides the considerations what link the previous situation and the development through the time. Hence, the situation, historic and economic trends could guide to frame the process.

The main research question tries to address and identify shrinkage in “general” terms. To do so, the literature used has an European scope in order to frame the dynamics of the decline for two reasons: First of all, due to the multi-causality of the phenomena, because it is important to target the frame of the thesis for not getting too fuzzy and; second, the focus in the Danish municipalities implies that the investigation would be preceded by a close context.

Trying to frame the dynamics in the shrinkage phenomena, a common approach in its identity must be performed but, the multi and cumulative causality and the interplay among them suggest the complexity of the task. However, the population decline can be pointed out as the main accepted indicator to describe it, in first term. On the other hand, it should be also underlined that this is just a type and localized decline where for example there could exist economic decay in a local level but not in a national level.

As exposed in table 1, the causality processes (indicators), which produce a negative development, are elements that can be affected by the decline. Thus, this trends introduced in the theoretical review are used to include the dynamics and the relations among them:

From a more global perspective the **de-industrialization** of the countries has been the main change in the work-labor including a transition to a market liberation. This leads to a development where the **employment** opportunities are clearly affected and the workforce who is used to work in a sector must migrate due to

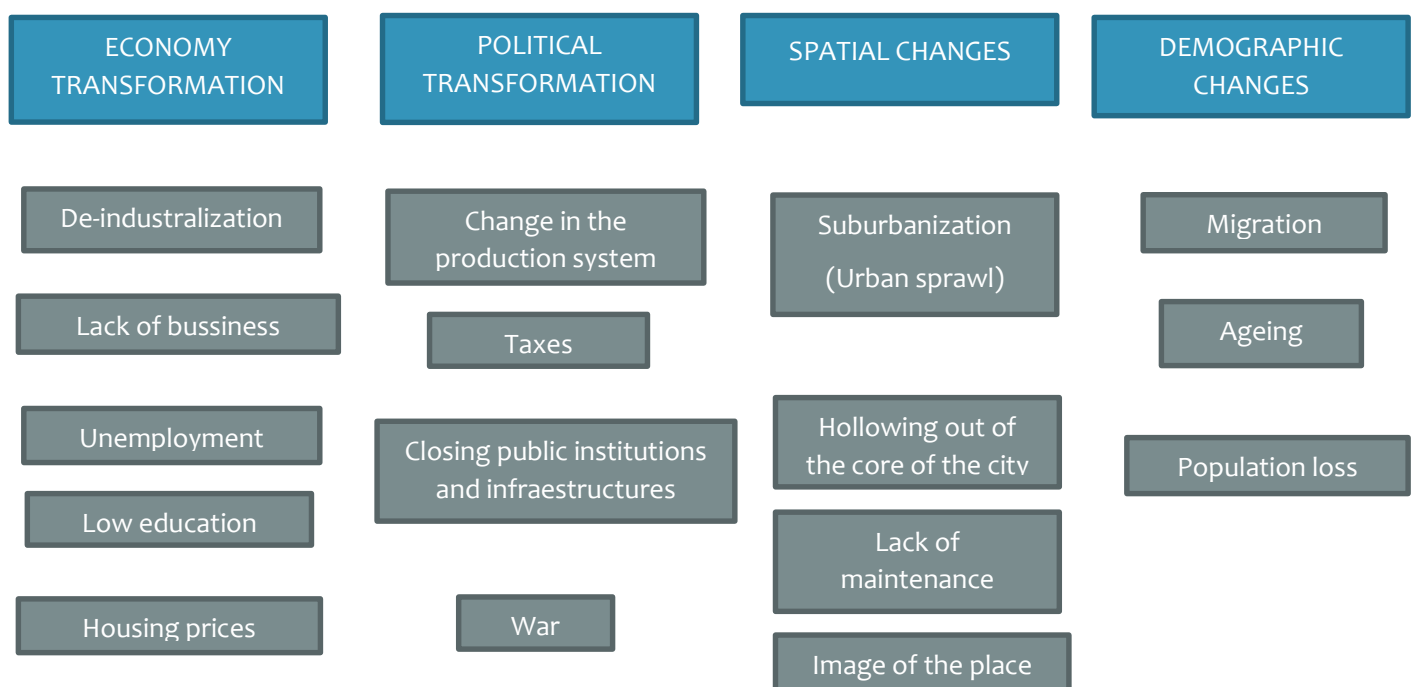
the change of the productive model (or none). Besides that, another **economic impact** in the place is the **housing prices** and a devaluation of the land what have also a direct shock in the collected **taxes**, because the **loss of population** consequently, influence negatively to the demand of houses and the public economy in the place.

In a national-municipal scope, the **spatial mismatches** lead to **suburbanization** or urban-sprawl where the migration could lead to a **centralization or de-centralization** model, depending on the case. In both senses, big cities could have a magnet effect to the surrounded areas and, on the other hand, population moves from that centers looking for a peace impossible to find in the stress life of the metropolitan areas.

In connection with the **economic transformation**, the empty houses and the lack of maintenance (of public spaces) due to the population loss and the decay of taxes, respectively, imply a new development of the land. The housing need to be demolish or refurbished and the **infrastructures** must be closed or reinvented. Besides that, public institutions like schools, kindergartens or nursing have to close, leaving not only empty buildings but also, a negative **image of the place**.

The influenced agendas of the economic sectors have an effect to the policies and strategies of the places what could aim growth to a part of the country and left out another zones due to **globalization and competitiveness**. Again, the consequences of these **political transition** entails migration of young people looking for chances for their own development.

This **demographic changes** derived from above, provides a place with elderly people and, consequently without a future still in decline.



Therefore, it is difficult to establish relations of the challenges described before, because they can overlap each other and, even when the indicators try to frame their own dynamics, they (the challenges) could feedback to each other. Here, it is where it can be observed the multi-causality and the difficulties to tackle the decline in those places where there are more than one indicator visible. Besides that, when describing the shrinkage dynamics without a contextual area, the results can suggest fuzziness in the answer. Therefore, the dilemma about the origins of the decay in a city seems to be a change in the system of the place, and this process of negative development can be called shrinkage where this new systematic model is not prepared for the transformation and it needs time and an adjustment. The procedures for adaptation and transformation to a new model until the negative curve turns to positive can be considered as strategies made by planners, politicians and citizens, thanks to investors.

### Danish contextualization

When addressing the research to a Danish context, the indicators of the shrinkage phenomenon are very alike, even when the decline process entails only the peripheral areas. For this reason, the investigation focuses in these areas and more specific in the municipalities chosen as case studies.

As consequence of the structural reform in 2007, visible in the metaphor of the “rotten banana”, it was developed a clear **centralization** of the public services, leaving behind the rural (or peripheral) areas in Denmark. This process of centralization of workplaces, activities and decision-making provoked the migration of young people to the main cities trying to develop their studies or find a job.

When addressing the decline in the chosen case studies, the shrinkage symptoms began to appear before and, consequently their dynamics are modified in their origins, where there was an economic transformation due to the **deindustrialization** of the agriculture.

The existence of mono-structural economic sectorial firms in Lolland based in agriculture, helped to the development of the decline when a change in the production system changed. The Marshal plan and the incorporation of new technologies derived a transformation in the structure of the firms where, the workforce decayed and the unemployment raised. Since those years the municipality has decline in all the dimensions analyzed.

Even the economic market in Bornholm has always been more diversified (agriculture, fishing and tourism) and the decline began later, the decline in every sector caused the population loss. Therefore, it is difficult to underline a single cause for the shrinkage in the municipality due to the challenges that it had been facing in every scope.

This political transformation and deindustrialization can frame the shrinkage as starting point of the decline process. In the next schema (figure 56) is it possible to address the sequence of decay in Denmark.

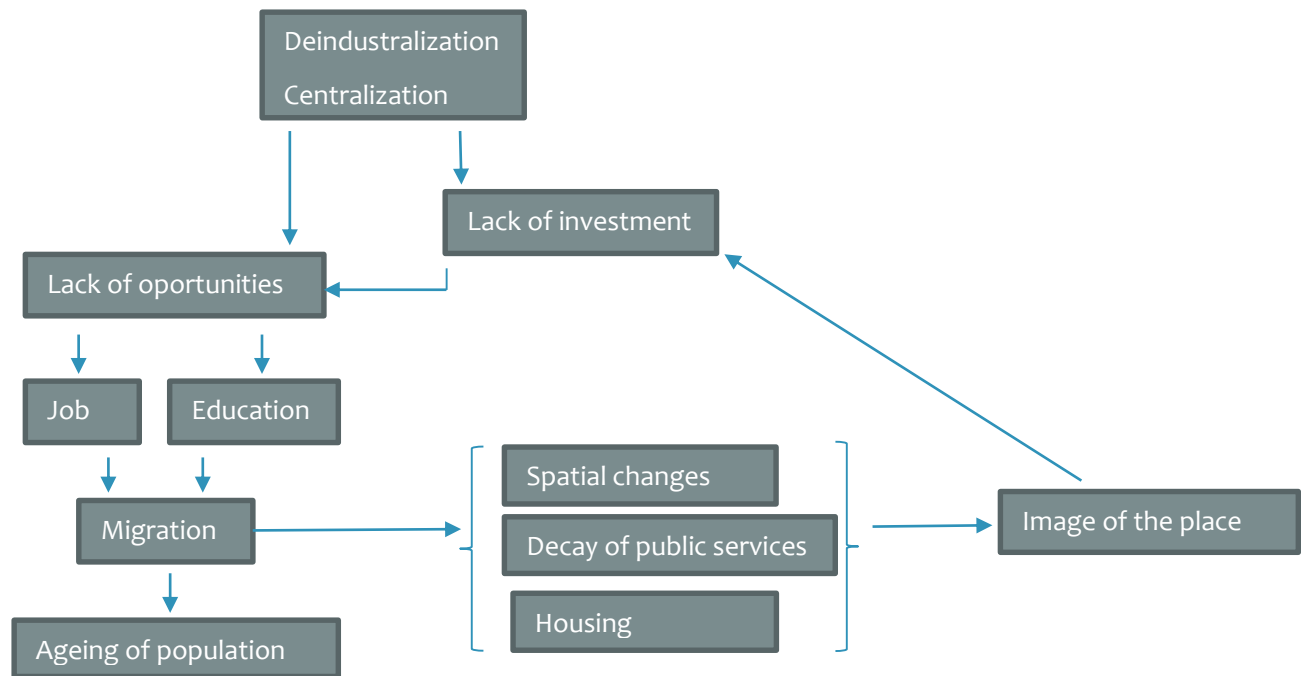


Figure 56: Schema of the shrinkage dynamics in Denmark. Source: Author's work

In conclusion, the shrinkage dynamics in Denmark follows a common pattern of development even the principal causes can vary. This dynamics, including the process of migration to metropolitan areas (urbanization), doesn't seem to change in next 10 years in Lolland and Bornholm where it is expected that the population will lose around 10 and 9%, respectively. Conversely, in Copenhagen is expected a population growth of 4% approx. (Ritzau 2015). This data could provide clues about the direction of changes of policies and governance in Denmark with a centralized administration system.

### Strategies to tackle the decline

The development plans from the municipalities embrace the visions and strategies for future achievements. Thus, planners, in a **cross-sectorial** form, analyze the challenges and frame the objectives in order to overcome the weak sides and promote the place.

The policies response for facing shrinkage in Denmark include an **acceptation** of the phenomenon what requires an adaptation to a new model. From another point of view and following also to Hoppers (see 4.4.1), to **counter** the shrinkage is the other approach to face the shrinkage where the marketing of the place is

fundamental to attract and retain population. But, this task is not easy. The implementation of the strategies requires resources and, in peripheral areas, they are insufficient. The attraction of investors or development funds are the first priority for planners because they know that, if the creation of employment raise, there would be needed more people in the municipality and population will grow.

To do so, it is essential the promotion of the municipality by strengthen the **values of the place** and understand that the development of these areas will never be the same as municipalities as Copenhagen or Århus, for example taken as big metropolis in Denmark. Many industries are located in the periphery where there is still potential for growth and employment (Ritzau 2015) and it is a mistake the competition in between metropolitan and rural areas because the development needs to be different.

As it has been analyzed in more details in the case studies, the strategies to tackle the shrinkage could involve different actors (public, private, networks, partnerships) and different levels (EU, national, regional, local or mixed) where, as analyzed in the theoretical part of the thesis, the patterns are similar (attraction of financial sources, networking, climate, tourism, etc .)

The connection of among sectors should be taken as a milestone to overview the dynamics of the visions and policies to implement. Thus, the promotion of tourism, for example, can create a chain of development indicators:

- Marketing of the place - green environment – improve of the service sector – financial attractiveness – creation of jobs – diversification of the market (new industries) – attraction of population.

Therefore, the relations among the dimensions for growth can feedback each other and multiplied the benefits. To achieve a complete evaluation, a deep analysis carried out by planners and selected stakeholders is needed.

From the educational point of view and due to the lack of longer educational places in the peripheral areas, the targets entail the networking between firms and educational institutions. The centralization, in this field, should be transformed to create a more homogenous opportunities for the population in Denmark (Højbjerg 2015). But, the centralization of the administrative sector generate opposing views because there are trends that defend the position in which the relocation of public sector jobs to rural areas makes no big difference. Instead, the jobs and businesses that are developed in the country should be local (Dansk Bygningsarv 2015) .

To conclude, the transformation in the peripheral areas in Denmark must take into account the **stigmatization** of those places (image of the place), analyzed not only in the theoretical part of the thesis but also in both

interviews and newspapers articles. This fact is undergoing in a visible and actual debate called “Udkantsmyten”<sup>45</sup> (Højbjerg 2015) or Jesper Bo Jensen (TV2 Fyn 2016) who study the cultural representation in the Medias of the periphery, through stories about the terrible people and surroundings that it can be found there. These untrue representations of the reality and the negative connotation of the word “provinsen” have awful consequences in their growth and, therefore must be erased.

### Importance of boosting the shrinking areas

Even the decline is visible and proved in the peripheral areas in Denmark, there is a need for creating a balance and highlight their special qualities and form a positive development in these areas by establishing a valuable framework and good living conditions for those who choose to visit or settle there (Realdania 2006).

The development in the Danish municipalities where the shrinkage is undergoing should be conducted to another perspectives where the focus is in the opportunities what offer those places in comparison with the metropolises: Time, room and space, peace and quiet - the absence of bustle and noise, nature and purity, security - the absence of unknown or uncontrollable risks (J. B. Jensen, Udkant i udvikling – det positive fremtidsbillede - Realdania 2016).

The change of the point of view entails also the economy what can be related to experiences, as for example in Bornholm through “Outdoor park”, in which the use of the natural surroundings is the scenario for activities where the community can meet not only for sports, but also to share experiences, eat and the most important, the creation of a community involvement what increases the social capital. Thus, the development of attractions where an experience is involved not only unify the society but also it can be seen as an impulse of the economy in these sites. Besides that, the local cultural heritage represents also a potential in the peripheral areas because it provides experiences for citizens, the development in tourism, human settlement, industry and trade (Mogensen 2006).

From the governance point of view, the problems that embrace an unequal development in Denmark threat the country to break in two (Quass 2013) and they can be named also as the biggest challenge in Denmark (Boserup 2013), therefore the government pretend, among other policies, to lower taxes for the creation of business in those areas. Moreover, the Business Authority in November 2015 have a new strategic campaign in which:

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<sup>45</sup> Outskirts Myth

*"The government wants growth and development throughout Denmark. Therefore, the Government will develop a comprehensive strategy for development outside the main Danish cities and rural areas. The strategy will support both residential and commercial development." (Erhvervstyrelsen 2016)*

In conclusion, there is a clear need to boost the peripheral areas in Denmark. It can be seen from reports made by Realdania, Statens Byggeforskningsinstitut (AAU), KL, Dansk Kyst- og Naturturisme and the central government, among others. But, once this question has response, it could be arise more: Is it possible to find a strategy to boost the peripheral areas and palliate the decline in the Danish municipalities? Will they find common solutions independently the political approaches?

### Limitations of the research

Firstly, this investigation pretended to embrace a municipality more in order obtain more data so the validity of the study of the phenomenon in Denmark would be more complete. The third municipality chosen was Langeland, due to the clear symptoms of shrinkage in the area but, finally it was decided not to continue with that idea due to time and length of this thesis.

Secondly, the language has been another barrier. The relevant documentation of the strategies and visions of the municipalities is in Danish and even my level of the idiom is acceptable, the difficulty of understanding the texts have meant the use of more time than expected.

Thirdly, I have tried to have more interviews with planners in Bornholm but, I had never an answer from them.



## 8. Conclusion

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This investigation has developed the shrinkage phenomenon through the identification of the dynamics involved in this process in order to clarify the dimensions, indicators and challenges in which a place (city, municipality) is subjected. To do so, this empirical research is conducted through questions that frame the scope of the inquiry, in which the structure is clearly performed from an European level down to the chosen municipalities, as case studies in Denmark. Thus, a holistic understanding of the shrinkage is narrowed and contextualised in space and time to reach a defined number of threats and strategies what planners have to consider.

The searching of the literature and data related to the phenomenon define its complexity due to the multidimensionality, multi-scalar and multi-temporal character which demands knowledge inside political, economic, spatial, demographic or cultural scope, to analyse the shifts and behaviours of the current state of the decline areas. Thus, the focus on the dynamics, interdependencies and the cyclic process, try to explain the demanded terminology to interpret and comprehend the phenomena.

Afterwards, the Danish approach is identified and the spatial polarization could be appreciated. From this point, the problematization in a national level is arisen due to the existing disparities in the peripheral areas, where the shrinkage is undergoing, and the metropolises. Even in global perspective, Denmark has not population loss, rural (peripheral) areas are immersed in a decay process. Therefore, once located and contextualised these municipalities, two case studies are chosen as representative to be analysed and compared.

Besides that, the visions and strategies to counter the decline are addressed. As a fundamental part of the research, and once the challenges are recognized, the strategies for development and survival of the municipalities are analysed. The need for investment and attraction of business are the main focus in the case studies but, furthermore, the stigmatization that they have to bear is also a scourge for their own growth. The negative reputation of these municipalities in the exterior frame them and the consequences collapse even more their development. Therefore, the values of the place should be reinforced and highlighted over the metropolises for the appreciation of their unique attractiveness.

Thus, planners try to achieve a cross-sectorial understanding of the municipality to study the synergies among the different dimensions, in which the decline plays a centre role by collecting and connecting all the pieces of the puzzle. There are many factors to take into account, not only visions of growth but also, the bureaucracy of creating networks and implementing policies. Special importance have figures as Realdania, what promotes this areas through campaigns (alone or as partnership) targeting not only, economic,

tourism or education, among others, for the development, but also a new conscience what entails a positive view of the place.

To conclude, the relevance of this research is provided by the interest of the author to get into a deeper understanding of this phenomenon what have entailed many factors (demography, planning, economy...) and even when a global approach could offer “simple” conceptualizations, the contextualization of this decline process is elemental to analyse its dynamics. Moreover, the review of Danish newspapers and reports notice this problem as primordial in the actual political debate in which there are opposing views in the policies to implement for countering the decay in those areas.

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# 11. Appendixes

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## 11.1 Appendix 1. Interview Lolland

Name: **Jørgen Nielsen**

Date: 27<sup>th</sup> April 2016

Place: Administration Bygningen – Rødby. Lolland Municipality.

### - **Presentation and tasks**

Jørgen Nielsen began to work in Rødby in 2008 as part of the team of the Teknik- og Miljømyndighed department in Lolland municipality. This department is focus in buildings, environment and planning but his job is addressed to the municipality planning activities and it embraces all types of areas (coastal, rural, summer houses, industrial, traffic, protected areas, developed areas...). If Local planning is involved, the building and environment section must be also implicated.

He is working also within renewable energy (solar panels, wind mills) and The Femern Belt project and how it will affect to the surroundings in the municipality.

### - **Spatial transformation**

Due to the Femern Belt project and the development what it entails, there are many changes and creation of new activities in the area. For example, change of camping places to nature areas, harbor to place the building elements, new train station or a circuit for cars (not formula 1).

The vision is to create new areas (or boost the existing) for business and tourism for being like clusters.

The development of the surrounded areas don't come along (example tunnel in France) and there is a lot of job to do and plan for the future.

### - **Population in Lolland**

Depopulation in Lolland began in the 50's when there was a modernization within the use of machinery in the production of agriculture. It provoked the migration of people.

There is unemployment in Lolland and they need jobs (investors) to attract people. Now with the building of Femern, there will be many jobs and they will come from Poland or Germany. The wish of Lolland is to establish a good place to live and stay in the municipality. Therefore, the next 10 years will be covered by

jobs and habitants, but the problem come afterwards when it is finished. The strategies are targeted in long terms in order to prevent depopulation in 2030.

Habitants in Lolland don't have a long education so, business are not technologic but logistic and production.

People who move to Lolland have no many resources or they are old people so, there is not so much contribution for growth in this sense.

- **Bussiness activities**

Location of commercial activities (McDonalds, f.ex.), in the surrounding of the end of Femern Tunnel so people can stop.

Politicians in Lolland would like to change the Transport Center and bring it to the municipality. Thus, the creation of a big Logistic area will be in there.

The place of the business area are limited in Lolland due to the sub terrain water in the south.

Politicians agree that they need employment and schools for boosting the population and afterwards it will come a development of the nature and culture activities.

Agriculture is another important economic sector but, it doesn't use many workers. There is also places for ecological production but with the same amount of workforce. The production is mostly corn and mechanized.

- **Housing**

There are very old and empty houses and they could get some support (around 50%) from the state to refurbish them but, mainly to tear them down. This is done for a better image of the place or, if it is decided to rehabilitate them, to provide them of good conditions for living.

If the house and the area have no value, the land use could be change easily if the planning area required it.

Administrative buildings are another problem because they are getting empty (after the reform or because they have to close it for lacking of activity) and there is no use for them but their maintenance cost.

- **Tourism development**

It is needed hotels in the surrounding of the Safari area to offer the possibilities to the tourist to stay longer or also inside the park. It is included in the national project Erhvervs- og vækstminister (Kyst og Naturisme)

Summer houses are not very popular in the municipality and, even there good beaches, people prefer to have it in Bornholm or Jylland.

- **Image of the place**

Love-storm Lolland is a community what tries, as a mental way via internet, to improve the city where they impulse the municipality through a good image of the place instead. This positive trend helps to revitalize the way people talk about the municipality. It means a lot for them that people talk positive about them because there was a negative trend what was focus in the old and far Lolland.

## 11.2 Appendix 2. Interview Bornholm

Name: **Rune Holm**

Date: 18<sup>th</sup> May 2016

Place: Office in Årstiderne arkitekter. Copenhagen

- **Presentation and tasks**

Rune Holm is Newcomer consultant in Bornholm since February 2016 and before that, he was involved in Business Communication and in the Hospital, also in the island, where he began to work in the recruitment area. His tasks entail everything relative to newcomers where he helps people to find jobs through connecting them directly to the firms, find a place to live or taxes information.

- **Political transformation**

In Bornholm, the structural reform started before than the other parts in Denmark because there were 5 different municipalities and they voted to form only one. Even there was some skepticism with that transformation, nowadays everybody prefer this way.

- **Population Bornholm**

Bornholm has been for several years affected by population loss but, since the last year the number migrants has been reduced and his objective this year is to reach 0 migrants. After getting the job, he could see that the number of people who want to move to Bornholm is rising what is very exhilarating. Even the prognosis tendencies are negative, his expectations are positive because people could see what the island

has to offer for families, cheap housing, nature and the connections are getting better (in 30 minutes, it is possible to reach Copenhagen -8 times per day).

#### - **Bussiness activities**

The crisis have affected the economy of the island but, the context is changing nowadays and it is the beginning of a process where the unemployment is in decline. The changes feedback to each other and when people move to a place, the municipality will grow also in infrastructures (schools, kindergardens) and local business.

Right now, the island has a demand of nurses, doctors, engineers, bricklayers, electricians and chefs. Thus he needs to recruit people to fulfill this demands.

In 10 years from now, it is expected the need of 2000 positions due to the new ferry (cheap) what will improve the connections to the island. From another point of view, and due to the ageing, it will be needed 2000 more positions related to this issue.

Firms like Realdania or Velux are involved in the Green Solution House where agriculture is promoted.

The tourist is seasonal so, it is only during 6 months when jobs are demanded.

#### - **Housing**

In the last five years have been many empty houses in the country side (not in the towns) and the central government has helped to demolish them. Houses in the country side can be found for 250.000 DKK but they will need a bit of refurbishment. It is cheap to buy houses and also the mortgage is low.

There are three different kind of houses:

- Summer houses: Foreigners' can't buy summer houses (only for Danes). This does not represent a problem because they are not so many (only some in Dueodde)
- All year houses: it is possible to buy a normal house if you have a job there and you live permanently there.
- Everybody can buy it even if you don't live there

The stock of houses is in decline with policies, as for example, targeting the creation of schools in Svaneke where there are only 12 and real states can't remember such a good indicator.

- **Tourism development**

Tourism related to food is one of the main trends in Bornholm nowadays, together with cultural attractions (museums) and they could get funds from Realdania or Trygfund (hospitals) to help the development of the tourism in the island.

- **Image of the place**

It is very important to stop talking about the unemployment in the island and negative sides where we should be focus in the positive things (attractiveness, more money in your pocket...).

The celebrities are starting to go to the island and, consequently, the popularity is rising.

Bornholm is a meeting island for politicians every year and, firms want to invest there because it can be a promotional place for marketing.

Bornholm can offer peaceful areas, good jobs, easy living, every kind of nature (beach, forests, rocky landscapes, no criminality, family place, outdoor sports (mountain bikes, kayaks), cheap housing, lower taxes, it is close to Copenhagen (30 min) and new flight destinations. He can't think a better place to live than there, even when he has been living in many places.

### 11.3 Appendix 3. Structure scheme of the thesis

