

The Impact of Worker Influx of the Fehmarn Belt Fixed Link



(Rødbyhavn April 2023, Femern A/S)

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Abstract

For large infrastructure projects that take place in remote locations where the human capital is not there to supply all the workers, it leads to mass influx of workers. The social impacts the workers can have on a community need to be investigated prior to the project in the environmental and social impact assessment. Failure to do this thoroughly, can leave a community in a situation where the influx leads to many negative impacts during the construction but most importantly after. The influx of workers for the Fehmarn Belt Fixed Link has created economic growth in the area. This current bloom is being met with positivity. However this paper found that the main concern about the influx of workers is how the community will be affected once everyone leaves. There are some plans in place to keep some economic activity. Currently the local experience is that they are being shut off from the project and the integration of the workers is limited. The local community would prefer it if the workers could get integrated through local events and activities and potentially stay in the region as it is primarily an elderly population and is in need of taxpaying workers.

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1. Introduction

1.1 Fehmarn Belt Fixed Link

Denmark has started the largest infrastructure project in its history, with the aim of creating an effective and green transport corridor between Scandinavia and the rest of Europe (Femern A/S, 2021). The project has been in development since Denmark and Sweden agreed to a bridge crossing at Øresund. However, the project has faced numerous delays, primarily on the German side. The project encountered obstacles during the approval process, particularly concerning new transport routes within Germany (Transportministeriet, 2022). Subsequently, the project faced additional delays as it underwent legal proceedings to address complaints. Despite the delays, construction of the first tunnel segment commenced this year following preparations that began in 2021.

The Fehmarn Belt Fixed Link will be an immersed tunnel consisting of 89 concrete segments, each approximately 200 meters long (Femern A/S, 2013). Of those 89 segments there will be 10 special segments to accommodate for maintenance as well as housing pumping stations, electrical infrastructure and other essential facilities for the tunnel (Femern A/S, 2013). Thus, on the Danish side, near the ferry port in Rødbyhavn, two distinct modular tunnel elements will be constructed. These modular elements have undergone several stages of prototyping to ensure the team is prepared for any potential challenges, thus reducing the risk of future delays (Flyvbjerg, 2021a; Parkin & Mills, 2022).

Figure 1 depicts the project timeline, which traces the project's inception back to 1991 when discussions to improve the transportation corridor to Sweden and Scandinavia as a whole started. Moreover, the project aims to promote regional development and economic opportunities within the Lolland-Falster region. However, this requires the establishment of job opportunities in the region both during and after the project's completion. Recently it has been determined the tunnel factory will not be deconstructed after the project is over although a decision regarding its future utilization remains pending (Jensen, 2023).

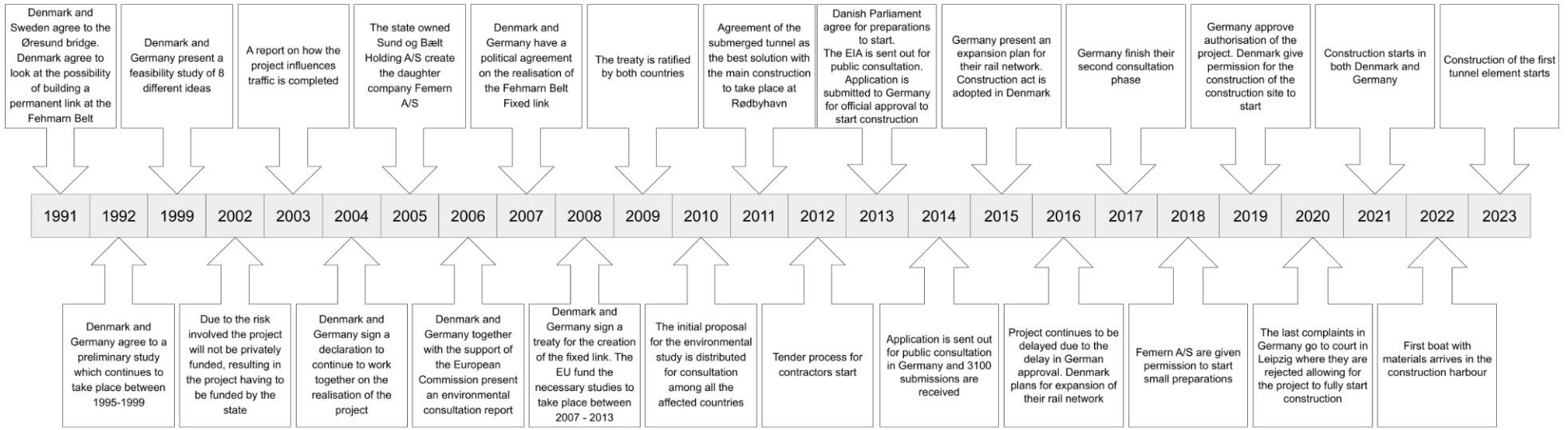


Figure 1: Timeline of the Fehmarn Belt Fixed Link (Transportministeriet, 2022)

1.2 Impact Assessment

Femern A/S, the company responsible for the construction of the project, has placed significant emphasis on sustainability and aims to reduce both environmental and social impacts (Femern A/S, 2021). The impact assessment conducted in 2013 identified a substantial number of environmental impacts, primarily related to marine life, resulting from the dredging required for the tunnel's placement (Femern A/S, 2013). Dredging causes significant clouding of the water and sedimentation, disrupting the water column and seabed. These effects have transboundary implications, necessitating the consideration of the entire Baltic Sea during the impact assessment. Countries affected by the impacts were also included in the assessment process. Dredging also disturbs existing habitats. Efforts are taken to relocate and provide new habitats that cover a larger area than what was removed. Similar measures are taken on land to mitigate the impacts on flora and fauna.

A common issue with impact assessments, is the disproportionate focus on the environmental impacts over the social impacts (Hanna et al., 2016). With regards to social impacts, the law in Denmark stipulates an impact assessment has to be carried out for environmentally derived socio-economic impacts. For this project these include farmers, fishing and tourism. Fehmarn is an island that is primarily used for holiday homes, similarly on the Danish side there are also areas of holiday homes. Thus leisure activities are also affected such as the beaches, cycling and walking routes. Lastly, noise and light pollution were taken into account. Femern A/S has stated these will be compensated, however the method of compensation has not been disclosed. The compensation scheme is determined by the Transport Ministry, but specifics are not mentioned.

1.3 Influx of Workers

The Fehmarn Belt Fixed Link project is situated in the southern region of Denmark by the Rødbyhavn ferry port, as depicted in Figure 2. To accommodate workers who cannot commute, a camp called the Tunnel Workers Village, or Tunnel village, has been established at the construction site, located approximately 1.5 km from the town. The Tunnel Village is designed to accommodate up to 1,334 workers at its peak, effectively doubling the population of Rødbyhavn (Femern A/S, 2021). It is important to note that this does not include workers who choose to reside in the area but not within the Tunnel Village. During the impact assessment, the substantial population increase and the project's remote location were considered, leading to the development of the Tunnel Workers Village as a suitable solution (Femern A/S, 2013). The workers who relocate to the Tunnel Village and to the surrounding region will consist predominantly of project workers from Poland and Romania. Typically, these project workers will move on to their next project once the current project concludes. To encourage some workers and their families residing outside the Tunnel village to remain in the region, efforts are being made to create additional job opportunities during the construction of the tunnel.



Figure 2: Construction Harbor as of May 2023, located next to the existing harbor and town of Rødbyhavn (Femern A/S)

2. Theoretical Framework

2.1 Influx/In-migration and honeypot effect

Influx/In-migration is defined as the movement of people into an area for the economic opportunities associated with the operation of a new project (IFC, 2009). This is related to the honeypot effect which is where people may move to an area in search of work and economic opportunities that come with a new project (Vanclay et al., 2015). However, the honeypot effect also refers to people that move to an area to become an affected person and thus eligible for compensation (Vanclay et al., 2015). Therefore, due to the honeypot effect referring to both in-migration and affected persons, this paper will use influx or in-migration to refer to the workers that have moved to the area, to specifically work on the project.

2.3 Affected Publics

People that live nearby and are thus affected by the influx of workers for a project are referred to as the affected publics (Vanclay et al., 2015). For this paper, this refers to people living in the Municipality of Lolland. However, the impact of the influx of workers for a project is mainly directed at the area of influence and not the whole region (IFC, 2009). Therefore, the towns and cities that are being investigated in this paper are the ones directly adjacent to the main

highway. These include Rødbyhavn, Rødby, Holeby and Maribo as displayed in Figure 3. As listed here from closest to furthest away from the project itself. Local communities are impacted differently by the influx of workers. However, one way in which the impact is experienced is by a fundamental change in the population (IFC, 2009). For these communities the introduction of younger people and families is a change from the large elderly population. This change in population does not have to be negative.

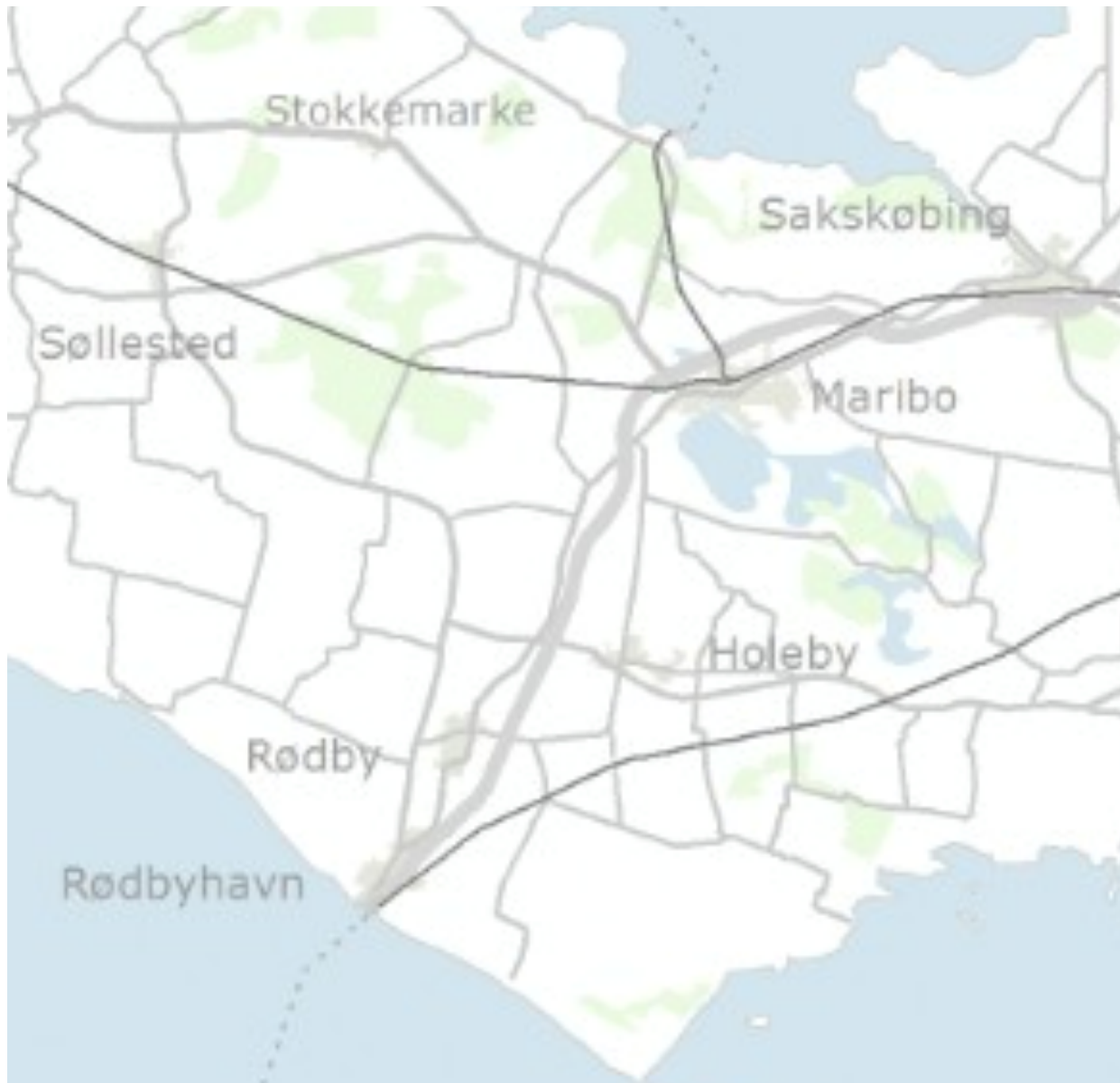


Figure 3: Map of Lolland with the towns of Rødbyhavn, Rødby, Holeby and Maribo, displayed (Lolland Kommune).

2.4 Mitigation Measures and Influx Management

Mitigation measures considers the measures taken to mitigate the negative impacts associated with the influx of workers (IFC, 2009). Influx management refers to the process of managing the influx of workers that move to an area (Vanclay et al., 2015). This includes the process that involves the long term strategies of what happens when these workers leave the area. Without proper consideration of social factors, the implemented mitigation measures will not effectively deal with the impacts and can lead to further consequences (Hanna et al., 2016). Furthermore, mitigation measures are sometimes neglected due to optimism bias and strategic misrepresentation (Flyvbjerg, 2021b). These are respectively defined as, being overly optimistic and deliberately misstating information for strategic purposes (Flyvbjerg, 2021b). In the impact assessment conducted by Femern A/S (2013) it is stated, they believe there are no major negative socio-economic impacts from the large influx of workers, instead there might be a slight positive economic impact, as the influx of workers drives a higher demand for some services. An influx of workers is not necessarily a negative impact if prepared and managed effectively (Vanclay et al., 2015)

Femern A/S has implemented the Tunnel Workers Village as a mitigation measure to address the significant influx of workers associated with the project, aiming to minimize their impact on local communities (Femern A/S, 2013). While the ideal approach would have been to hire locally, the local community lacks the size and specialized skills required for the successful completion of the project through purely local procurement. To assist with local procurement, a training facility has been established to provide local residents with the opportunity to obtain the necessary specialization (Femern A/S, 2013). Additionally, all contractors are required to maintain a minimum number of apprenticeships. Moreover, efforts have been made to ensure that some workers and subcontractors engaged in the Tunnel Village and on-site facilities are from the local area and municipality (Femern A/S, 2013). The Tunnel Village offers various amenities, including a cafeteria, leisure area, outside green space and more. These measures have been adopted to reduce the workers' reliance and interaction with the local towns.

3. Conceptual Model

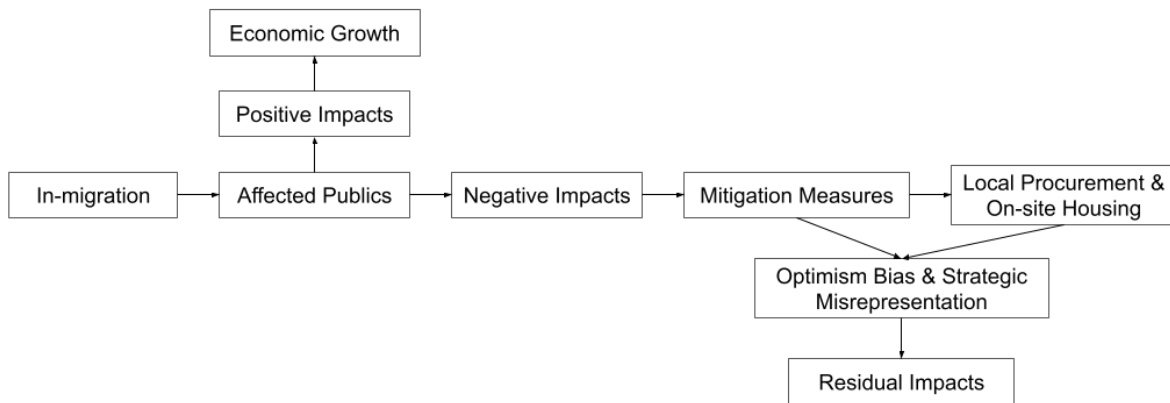


Figure 4: Conceptual Model

The influx of workers can have both positive and negative impacts on the local community. To mitigate the potential negative effects, appropriate measures should be implemented. In the case of the Fehmarn Belt Fixed Link, the two mitigation measures adopted were the use of local procurement to reduce the number of migrants as well as the establishment of the Tunnel Workers Village. The Tunnel Village provides accommodation for foreign workers, ensuring they do not place an excessive burden on local communities by seeking housing in nearby towns. Proper mitigation allows for the influx of workers while limiting disruption to local communities. However, the implementation of a proper management strategy is to consider the long term impacts and how a community and an area is affected by the departure of the workers. The strategy should ensure a smooth transition afterwards with a proper decommissioning plan.

4. Research Question

Even though the impact assessment completed back in 2013, says the Tunnel Workers Village and the large influx of workers will result in no negative impacts for the local community, if any it might be positive, this paper attempts to investigate how this interaction has been occurring through the research question:

How is the local community of Lolland Kommune being impacted by the influx of workers for the Fehmarn Belt Fixed Link?

Sub questions to further explore the main research question are:

- How is the interaction between workers and the local community?
- What management strategy is in place to deal with the impacts?
- How are the impacts experienced by the local community?

5. Expectations

As a result of the ESIA conducted as well as the mitigation measures mentioned in the report, the expectations are that there are no significant impacts on the local community from the influx of workers. The Tunnel Village provides the necessary facilities for the workers during their leisure time. However, the expectation is to find skepticism surrounding long term impacts, as more people move to the Tunnel Village, as well as sub-contractors build offices in the area and harbor. Furthermore, some skepticism around the continuous consultation that will take place, as the overall long term strategy is focused around the municipality, and does not have a specific focus on local communities around the construction site.

6. Methodology

The data collection for this paper was conducted through semi-structured interviews with people from the local community impacted by the influx of workers. Femern Link Contractors (FLC) were contacted in an attempt to interview workers living in the Tunnel Workers Village, however at this time they do not allow outsiders to enter and speak with the workers. Instead workers living outside the Tunnel Village were interviewed. Furthermore, a representative from the municipality was interviewed, as the municipality is in charge of the socio-economic development of the area. Interviews allow for in depth explanation of the feeling and impacts to be described by the different stakeholders as well as provide the opportunity for the management experience to be explored.

Through local ambassadors, as mentioned in Table 1 interviewee 1 and 2, for the region, snowball sampling has been used to contact local residents and the workers living outside the Tunnel Village. Local ambassadors are individuals who live in the area and help new people feel welcome as well as organize events for the entire community. The interviews were conducted in person with the exception of the municipality worker, where the interview was conducted online. All the interviews were recorded for transcription. Consent was given verbally at the beginning of each interview and can be seen at the beginning of the transcripts. The interviews were then analyzed using inductive and deductive coding on Atlas.ti. Furthermore the research used document review, specifically of the annual sustainability reports as well as the environmental impact assessment conducted before the start of the project. The neighborhood newsletter was also used to look at what is happening in the neighborhood and the information the locals receive.

Table 1: Interviewees, their role and justification

Interviewees	Role	Justification
1	International Ambassador for Lolland Kommune	International who has been traveling to and from the area for 13 years and lived there for the last 3 years. Married to a Dane from the area. Is very involved in the community and in the international network as well as trying to get the Tunnel Village workers to engage with the local community.
2	Danish Ambassador	Born and raised in the area. Has been involved politically with the Kommune and is an active member. Is also part of the elderly council of the community and works with the local newspaper.
3 and 4	Married couple moved to Maribo to work on the project. Owner's representative & builder for FLC	Moved to Maribo 2 years ago to work on the project. Has a daughter attending the international school. Different jobs within the project, working for different contractors. Project workers all their life.
5	Local Rødbyhavn	Finnish, moved to the area over 10 years ago, without knowing the project would happen. Has experienced various forms of discrimination when trying to work for the project. Additionally, he has experienced the mass change in the community as well as the large influx of workers.
6	Lolland Kommune, Strategy and Politics	Previously second in command at Lolland Kommune for Development and Industry. Now second in command for Strategy and Politics. Has worked closely with the future strategy for the region and the project itself.

Several ethical considerations were to be taken into account during the interviews. Verbal consent was given at the start of every interview. Additionally, a code of conduct was sent out prior to the interviews to allow the participants to familiarize themselves with it and ask any clarifying questions they might have had. Participants were also informed that it was voluntary and they could opt out at any point. The participants were informed about privacy of their information, as well as confidentiality as the interviews are solely used for academic purposes and are only handled by the researcher. Furthermore, the participants personal information, such as their name have been changed to ensure anonymity which further ensures the participants privacy and safety. Lastly, all collected data has been handled with integrity to ensure correct and accurate information to ensure validity of the research.

7. Results

7.1 Influx

Since the project started the construction on the tunnel element factories, a steady influx of workers have moved to either the local area or to the Tunnel Village. Recently, the Tunnel Village has been completed and can accommodate up to 1,344 workers. Interviewees 2 and 5 mentioned that due to the substantial number of workers, Femern A/S also bought several houses in the local area to accommodate workers. Furthermore, there are commuters from other regions in Denmark, such as Copenhagen, that stay a few nights during the week. According to interviewees 3 and 4 they stay in either the building of Femern A/S, which used to be a hotel, or in local hotels paid for by the contractor. Consequently, the influx of workers is even larger. However, the commuting workers contribute to the local economy as they are staying in local hotels, bed and breakfasts and using local shops and restaurants.

A result of a substantial influx of workers can lead to a change in the environment of a local community and that is the case of Rødbyhavn (IFC, 2009). The establishment of new shops and dining places reflects this transformation. Stores such as STARK offering construction materials and equipment have opened nearby for convenient access. The center of Rødbyhavn has also seen the opening of a new ALDI supermarket and a noticeable increase in the number of pizzerias, kebab shops and grills along the main road.

The influx of workers has also brought about changes in alcohol consumption patterns, with a substantial increase in the sale of alcoholic beverages. Stores display large coolers filled with beer and interviewees 2 and 5 told the rumor that they sell one pallet of vodka a week. Additionally, the expansion of Rødbyhavn has had negative repercussions for the neighboring town of Rødby. This indirect impact on adjacent towns is expected when a large influx of workers occurs (IFC, 2009). The closure of existing stores in Rødby, including the recent closure of one due to the opening of the new ALDI in Rødbyhavn, exemplifies the interconnectedness and interdependence of these towns. Financial considerations likely play a role as it may not be economically viable for store owners to maintain multiple locations. Consequently, the compromise is that one town's development comes at the expense of others in the vicinity.

7.2 Affected Publics

The project has had both positive and negative impacts on the public. However, closer to the project the locals tend to experience the associated negative impacts rather than the benefits. At the beginning when workers were first coming to the area, Femern A/S bought houses in Rødbyhavn. Interviewee 5 said this caused a temporary increase in housing prices as people hoped their houses would be bought by the company. Since then, further purchases of houses in other towns have been made, which are being rented to project workers, further increasing property prices and rents. As a result there the local communities have experienced an out-migration.

The majority of the people moving there are project workers, who know they will only be there for a set amount of time. Thus, buying a house is not an investment that makes sense to them. Furthermore, the workers who are not full time employees are living there for 4 weeks, then they have 4 weeks off, where a lot of them go home to their home country, before returning again to work another 4 weeks (Rebouh, 2022). Interviewee 2 mentioned she can feel this 4 week cycle within the neighborhood as it will be a lot quieter when the workers are gone. Furthermore, The work schedule has been under continuous scrutiny by the unions since 2020 as they believed it did not follow Danish labor laws. This resulted in a small change that provided 4 days off within these 28 days of work (Rebouh, 2022).

Nevertheless it is not all negative. One of the major impacts that is felt by the locals is how lively the area has become. As of December 2022, there were 1052 living in the Tunnel Workers Village, and 810 living outside the Tunnel Village (Femern A/S, 2022). These include the shift workers as well as families that work full time as civil engineers and are not shift workers. Interviewee 1 said this influx of young people with children has created an atmosphere that contrasts the regular elderly community.

I have been coming here for 13 years. Before things shut down at 6 and it was very quiet. It's like a retirement community. You start to see more activity in the streets and kids bicycling and more families out. I have seen that kind of glow up since I have been here in the past 3 years. I just really hope that the government keeps the momentum and helps the people that want to stay.

To accommodate the influx of international families an international public school was built in Maribo. The school has a capacity of 100 students which is expanding to 120. However, there is already a waiting list for when expansion is completed and local schools are also full. This has led to families turning down job opportunities in the area due to the lack of available space for their children. Moreover, interviewees 1 and 6 also mentioned the international school has attracted other international families who are not associated with the project to move to the area. Moreover, with a combination of English and Danish teaching, children and families have an easier time integrating as they are learning the language. However, interviewee 6 said that the large number of people needing schooling and with not enough space, there is an issue of finding a place and funding for expansion. Furthermore, interviewees 1 and 6 raised concerns about the long-term impacts, when in six years many of the families move away again.

Workers, both foreign and Danish, have also been affected. Interviewees 3 and 4 mentioned a dispute between the local workers and foreign workers regarding payment, where Polish workers believed they were being paid less than Danish workers. However, the project policy stipulates that all workers are paid equally and there is an open book policy that allows for unions to scrutinize the books to ensure compliance. Ultimately, it was determined that all workers were being paid equally, there is just a difference in contract. Workers living in the Tunnel Village have their food expenses covered as they are served 3 meals a day, whereas the Danish workers living outside the Tunnel Village have to pay for food in the cafeteria. Interviewees 3 and 4 said this is the largest dispute that has been so far, however there have

been other smaller cases that get resolved quite quickly. These salary disputes were also mentioned in the Femern A/S sustainability report and they also stated the issue has been resolved (Femern A/S, 2022).

Regarding contracts and nationality, interviewees 3 and 4 noted that the nationalities of workers depends on who the contractor is. This may explain why some locals have struggled to find employment, as the job they are applying for may be under an international contractor rather than a Danish one. The Danish contractors have their speciality that they are focused on. There is a major French contractor working on the elements, and there they are majority French. Interviewees 3 and 4 said, the subcontractors of FLC use their own workers and they use who they are used to working with.

Even though there is this difference in contractors and who gets hired, the Danish workers are mainly functionary or administrative workers coming from further up in Denmark. According to interviewee 5 when it comes to the lower wage labor, there are few locals that have been hired.

Basically in the beginning there were many Danish workers, even locals too, but from Guldburgsund Kommune, half way up in Denmark. At the moment in total now there are max 20 Danish people, the rest are from Poland, Romania. Basically foreign workforce.

Local procurement has been decreasing since the beginning of the project. Initially, when the influx of workers was low, the local workforce was highly utilized. Interviewee 5 who works for the general maintenance mentioned how they were assisting with tasks such as moving equipment and performing work on-site. They were hired to drive excavators and dumpers and going through the training center to get certified. However, with the influx of contracted workers increasing, opportunities for locals were diminishing. As interviewee 5 stated, “From one day to the next without an explanation”. According to the Danish labor union 3F, it appears that FLC prefers to hire foreign workers due to Danish workers being unwilling to work the 28 day cycle (Rebouh, 2022). FLC responded by stating that the workers that were sent to them by 3F were not qualified, despite some having over 30 years of experience (Rebouh, 2022). According to interviewee 5 the reason was that they would have to pay them a higher salary as they were Danish. This contradicts the statements by interviewees 3 and 4 as well as the Femern A/S sustainability report of 2022 which states all workers are paid equally.

7.3 Mitigation Measures

One of the clear mitigation measures implemented from the outset of the project which has been repeatedly highlighted throughout the paper, is the Tunnel Workers Village. It was designed to minimize the impact on the local housing market and local communities. This was not entirely achieved. Despite the intention to reduce commuting, most Danish workers still commute and stay locally during the week. The primary benefit of the Tunnel Workers Village has been to facilitate the procurement of external workforce and enable them to start working without delay. Nevertheless, it has resulted in the concentration of the majority of the workforce to be in one specific location, namely Rødbyhavn. While this may have been a practical

solution, it is creating a divide between the locals and the workers. The workers are isolated and do not integrate into society. That is the main idea with on site housing, as it should reduce the interaction with the local environment and reduce the impact on local infrastructure and services (IFC, 2009). However, the locals would have preferred for them to live among them, but with the constraints of the housing market the Tunnel Workers Village is a suitable solution. The challenge arises when the workers are not approachable and the interaction between workers and the local community is limited. The workers become isolated from the rest of society leaving the locals wanting more access from FLC. Interviewee 2 initially thought it was a great idea but is now skeptical.

I thought it was a good idea when they said they didn't want camping trailers everywhere. However, now when we go out there, the guard is standing there and we can't get in to talk or anything.

Interviewee 2 also mentioned that there is a large Polish community in the municipality and neighboring municipality. They even organize specific Polish events for them such as concerts. They had a concert and wanted to invite the Tunnel Village, however they were unable to get the information to them. Femern A/S prefer to hold their own events and keep everything internalized. Despite this, Rødbyhavn has experienced a boost in economic activity, with new shops, all as a result of the Tunnel Village. Although none of the locals work there, it still helps. The main concern is the impact on the community once the project is completed, as according to interviewee 5 *"Half the town will die again"*. The current decommissioning plan is for the element factory to be deconstructed, although efforts are being made to make it permanent, as discussed further in section 7.4.

Currently there are talks for the concrete factory to stay and additionally they have built an industrial park that should allow for international businesses to come to the area to boost the economy long term within the region. Major infrastructure projects tend to be part of a larger economic development plan for a region (IFC, 2009). For this case, it is also being used for that purpose. However this sentiment is not shared among some of the locals as they do not believe in the idea.

It is a big number but there are also people that will work and new systems that will bring more people. So there will be some change. Of course if they don't keep the factory I think that will be a very big difference.

Having to attract an entire new group of either highly educated Danish people or internationals will be a challenge. Currently the majority of the people working on the project that have moved to the area are project workers. Project workers move as soon as a project is over to the next one.

What we are missing is tax paying citizens, who will pay tax. We are a majority elderly and transfer income community. What we need are people in jobs and in jobs that pay good and pay tax. And they need highly educated jobs. However,

they won't continue once the Fehmarn project is over. So I don't see how we get the positive out of it.

The area needs to have something that will attract either a new set of people or try to keep some of the current talent that has been attracted. The human capital of Lolland is simply not large enough for economic development. The municipality needs to create an incentive for businesses and people in order to build on the success of the project and create economic prosperity for the region.

7.4 The Long Term

When asked about the influx of workers and its impact on the community, interviewees frequently expressed concerns about the long term impacts. Although the current situation appears to be manageable, there is doubt about the future. At present, the negative impacts are primarily associated with the community of Rødbyhavn, which is located adjacent to the project and the Tunnel Workers Village. In contrast, areas that have experienced an influx of families seem to experience the positive side of the influx. However, since the project only has six years remaining, the current economic boom and services of the area will eventually experience a significant decline as mass out migration occurs. Even interviewee 4, who is currently working on the project expressed concern about the long term impacts.

Because let's assume we move forward 5-6 years. People might migrate away to another project or somewhere else. You got all these vacant properties. You have all these schools that don't have people, supermarkets that were built. In 6 years time it will not have the people that are currently going.

Interviewee 1 also wonders how the municipality or even the country as a whole can help provide the necessary jobs to keep fostering economic development for the region.

The project has affected the growth of the international community here. When the project is over those folks usually travel to the next project. What I think the municipality could do to help and maybe not just the municipality but the country, is to help build international businesses on Lolland. Because right now the project is the only thing people have to work on. So those folks don't have any other. If we want them to stay in Lolland or Falster or whatever, we have to provide some kind of job.

Interviewee 6, who has been involved in the project since 2009, offered insights into the future prospects of the region and how the project can be leveraged to drive growth. The Municipality of Lolland has identified three potential avenues for development, all of which they intend to explore. The first approach entails leveraging the anticipated growth in freight traffic. Currently most freight traffic passes through Jutland, but upon completion of the Fehmarn Belt Fixed Link, this traffic will be redirected through the tunnel as it offers a shorter route. The aim is to establish businesses along the highway and railway to capitalize on this shift. The process has already commenced with the sale of the first business park to a German investor.

The second consideration is the retention of the tunnel element factory. Although this decision has yet to be finalized by the government, the original plan was to deconstruct the factory to avoid leaving a vacant industrial space. However, for the factory to continue operations, an impact assessment must be conducted (Jensen, 2023b) This would generate 1000 to 1500 jobs and serve as a significant economic contributor, similar to the present situation. Consequently a similar influx of project workers would be expected. These workers would be involved in the specific project for which the element factory is utilized and would subsequently depart upon its completion. This scenario highlights the concept of optimism bias as there is a belief that this solution will resolve the issue of workers leaving, when in reality it reproduces the same problem currently faced (Flyvbjerg, 2021b)

Lastly, the third possibility is to foster growth through tourism. The expansion and alterations to the coastline offer significant opportunities for the development of tourism. However as interviewee 6 highlighted *“It requires a private investor to see the possibility and to take the risk”*.

8. Conclusion

The research conducted in this paper highlights the varied impact of the influx of workers on the local community of Lolland, with differing opinions depending on individuals and locations. In closer proximity to the construction site and the Tunnel Village, the impact on the local community and local life is more negative as it has limited employment opportunities and local residents have moved out. However, in the larger town of Maribo there is a more positive sentiment. It has become a vibrant town with an international community that is blending with the Danish community. The international school in Maribo has facilitated integration and interaction between new families and the local community. Nevertheless, there is a concern about the long term impact once the project is completed in six years.

Based on the impact assessment and insights from the municipality it appears there is no definitive long term plan. The original plan was to deconstruct the element factory and the workers would leave. Consequently, no measures have been taken to address the significant out-migration and the subsequent impact it will have on the existing infrastructure and the investments made to accommodate the influx. For example, the construction of an international school was prompted by the project, but once the families leave, the need for such a school may diminish. On a positive note, the municipality has started to prioritize the long term planning and are exploring possibilities to capitalize on the success of the project to attract businesses and skilled labor to the region.

Overall, the consideration of the impacts of the influx of workers, both in the short and long term has been lacking and the mitigation measures have been insufficient. This oversight could stem from an overly optimistic view that the Tunnel Workers Village alone would suffice at mitigating any negative impacts or from a strategic misrepresentation in the impact assessment where

Femern A/S stated that there would be no major negative socio-economic consequences from the large influx of workers (Femern A/S, 2013).

A recommendation for future projects is to extend the scope of analysis beyond initial observations. It is crucial to assess the long term impacts and engage in ongoing dialogue with the local community to ensure that the stated impacts align with what the local residents experience. Furthermore, the current information flow is limited and lacks opportunities for locals to provide feedback. Femern A/S and the municipality should try and foster engagement with the local community. Additionally opening up the Tunnel Village to the public could facilitate integration and understanding between workers and the local society. Although the workers have their own community within the Tunnel Village, enabling locals to connect with them would promote inclusivity and offer workers the opportunity to participate in local activities. Lastly it is imperative to build upon the positive impacts of the project to drive growth in Lolland. This should be a primary focus during the remaining six years of the project as without proactive measures the region is at risk of reverting to a forgotten place once the project concludes.

9. Reflection

To improve the research conducted in this paper, it would have been beneficial to interview more locals, living close to the site. This would have improved the quality of the data as well as provide more in depth experiences to draw conclusions from. These interviews could have possibly given more insight into the real impact of the Tunnel Workers Village instead of the general project and the general influx. Due to complications with getting permission to interview workers on the Tunnel Village, the research became more expanded to include a large area and focus on multiple towns, specifically the large city of Maribo. This allowed for various stakeholders and affected areas to be included in the paper and gave a broader view of the impact the influx of workers has had on the region as a whole. Lastly, further research should be conducted once mass out-migration has taken place when the project is finished to see the consequences the neglect in consideration of the long term impacts has on the local community.

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