



Port Centricity: Growth and Diversity for Local Ports

Executive Summary

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1. INTRODUCTION

The European maritime sector is an integral part of the wider European economy, comprising of a range of industries, including: maritime transport, ship building, shipping, fisheries, energy production, maritime leisure activities and marine environmental organisations. Ports are major actors within maritime transport, and play an important role in linking the various different industries in the marine and maritime sectors (Suykens and Van der Voorde, 1998). Within the Channel region, ports play a vital role in transport across one of the busiest shipping channels in the world. By their very nature and position, ports are centres of multimodal transport: indeed, the ports across the North of France and Southern England are ‘transport hubs’ for the Channel region, providing transport links across the Channel and to a number of major cities, in both France and England, as well as across Europe and internationally.

As one of the main links of increasingly complex logistics and transport chains, ports have a vital role in ensuring economic stability on a local, regional and national level. Ports are an essential element, not only of global transport networks, but also as a strategic point at which value can be added to goods. In a region so dominated by its coastline, it is, therefore, vital that development opportunities for the port sector are understood, and that strategies that support their continuing growth are identified. While port centric logistics have become an accepted approach to port operations, this has been focused on activity solely occurring within the port site. However, this report seeks to argue that port centricity should be expanded to include engagement with local communities and businesses, supporting growth and development within the port as well as the wider community.

Increasingly, ports are having to adapt to the changing political, economic, social and environmental and as such are undergoing something of an evolution. Ports are moving from a traditionally closed customs based interchange to a locally focused business developer, whereby they have the potential to play an increasing role in economic growth of their local communities. This has changed the perception of the smaller niche ports, highlighting their importance to coastal communities; a shift which has been recognised by this research. This report synthesises the findings of two studies

developing and evaluating the concept of port centrality across the Channel region. The studies were undertaken as part of the Channel Arc Manche Integrated Strategy (CAMIS) Project Strand 4, a France (Channel) - England collaboration funded by INTERREG IV A. The report summarises these studies and provides synthesised recommendations based on the research findings.

2. BACKGROUND TO CAMIS AND PORT CENTRICITY

The CAMIS project is an EU INTERREG IVA France (Channel) – England funded project, which aims to develop an integrated maritime strategy for the Channel region. The strategy will focus on promoting growth and development of the Channel’s maritime sectors and coastal communities, and will encourage cooperation and collaboration between stakeholders in France and England. Both France and England have a longstanding maritime history, with both governments increasingly recognising the importance of the maritime sector to a nation’s growth and prosperity. In addition to this, there has been a growing call for the development of sustainable transport within the region. As major actors in the transport sector, ports were identified as a priority area for the transport strand of the CAMIS project. Strand 4 of the CAMIS project focused on the issues surrounding transport across the Channel region, identifying port centrality as a potential solution to common challenges facing ports within the Channel region.

2.1. Transport and Ports of the Channel/ Arc Manche

Ports are multimodal in nature, and are a vital link in the development of sustainable transport and logistics on both a national and Channel wide scale. While the major ports in the Channel region, such as Southampton and Le Havre, act as a gateway to international trade and passenger transport, the numerous regional ports in the area potentially enable this trade to be more effectively managed through short sea shipping (SSS) and the consequent development of local coastal communities. The Channel/ Arc Manche is the main shipping route in North West Europe, and is particularly unique due to the density of traffic, and concentration and diversity of activities, with 80% of total international import/ export exchanges done by sea.

While the Channel/ Arc Manche is a relatively small sea, it is a globally significant transport route for both passengers and freight. Although the coastlines bordering the Channel are geographically proximate and have some similarities, for the most part the ports on either side of the Channel exhibit significant differences in terms of management, governance and funding. Historically, the French ports in the Channel region have had strong links with the French state, resulting in the designation of two port types in France:

- The “ports autonomes” managed by public companies,
- The “ports d’interet nationaux’, managed directly by the state.

More recently, French Local Authorities have played an increasing role in the funding and management of ports, with French regional ports, in particular, now commonly governed by the Chambers of Commerce and Industry (CCI) within each region and department. In contrast, English ports within the Channel region represent three different types of ownership structure:

- Trust ports, where ports have been set up by an Act of Parliament and have access to limited funding, with profit reinvested into the ports;
- City council ownership, where ports are supported by the local council with access to council funds if agreed by the local authority; and
- Private ownership, where ports are owned by private companies and have access to private funds and potentially more freedom over the decision-making and governance process.

These differences in ownership and the implications this has for overall management and governance of Channel ports must be considered when developing a Channel wide strategy, in particular a port’s ability to contribute and engage with the formation of a port centric cluster. In spite of their differences in ownership, funding and governance, ports across the Channel region, in both France and England are facing similar challenges. Like many other industries, ports are experiencing changing circumstances, and are increasingly looking to adapt their operations and physical infrastructure in

such a way that it supports on-going growth and development of the sector. These common challenges provide synergies between the ports of the Channel/ Arc Manche, and could be addressed using similar methods, and recommendations, such as those provided by the formation of port centric clusters. A number of driving factors impacting and challenging the port sector have been identified, including:

- A growing trend towards the use of larger containers, ships and lorries as a method of increasing efficiency and reduce costs.
- Increased size of containers resulting in a need for amendments to port infrastructure, such as LO-Lo facilities, storage and enhanced opportunity for intermodality.
- A shift in the nature of ship based transport, resulting in an increased level of global transportation of freight.
- Large ships can only be accommodated by deep water ports, restricting accessibility and limiting the development of effective transport routes in smaller, shallow water ports.
- Deprivation of communities surrounding smaller ports impacting skills and resource availability.

2.2. Port Centricity and the Channel region

Port centric cluster formation has been identified as a potential strategy for encouraging business development within the Channel's port areas, whilst simultaneously supporting sustainable transport across the region. While the primary role of ports has been centred on transport of freight and passengers, in recent years ports have played an increasing part in local supply chains, and support of regional maritime industries. This can be seen as a move towards the opening of ports to local communities and the development of collaborative relationships, termed **port centricity**. Earlier research has defined port centric clusters as:

"A set of interdependent firms engaged in port related activities, located within the same port region and possibly with similar strategies leading to competitive advantage and

characterised by a joint competitive position vis-à-vis the environment external to the cluster". (Haezendonck, 2001)

In the Channel region, the more purposeful adoption of port centric cluster strategies would bring together local authorities, ports, businesses, coastal communities as well as their wider supply chains, facilitating a more holistic approach to port developments. This move towards an integrated, holistic style of managing ports is supported in 'The Port Policy Review' (2012-2013) which aims to introduce a port policy that would engender growth and integration within the sector. The report states that *"by bringing together groups of related businesses, ports also create a cluster effect that supports economic growth by encouraging innovation as well as creating and developing new business opportunities and jobs"*. Additionally, the development of port centric clusters relates directly to the recommendations set out by the 2012 EU Blue Growth Strategy, which seeks to identify both the challenges and their solutions impacting the maritime sector while supporting sustainability and growth.

Clusters provide a platform for effective and meaningful dialogue between different actors (Schmitz, 2000; Porter, 1998; 2000; Pyke et al, 1990), and allow member businesses to work in an environment with reduced risk, enhanced innovation opportunities, effective knowledge exchange between actors, improved efficiency and generating synergies between actors (Bock and Kim, 2002; Chesborough, 2006). Indeed, the research conducted through this study seems to indicate that it is the right balance between cooperation and competition that may generate optimal benefits to companies operating within a cluster. Given this, the development of port centric clusters has the potential to realise a range of benefits including:

- Improved transport links across the Channel region,
- Decreased pressure on specific transport links and reduce road congestion through an increase in SSS as well as reducing the need for transportation by encouraging added value processes within port sites.
- Opportunities to add value to exports and imports on site, contributing to local business development and growth.

- Encourage more efficient use of space within the port sector, through supporting businesses that can add value to goods on site.
- Improved knowledge exchange between businesses within the supply chain.
- Strengthen and build relationships between businesses, research institutes, universities, policy makers and other public organisations.
- Contribution to local business development within maritime sectors, thereby encouraging economic growth within the region.

These benefits have led to the suggestion that supporting the development of port centric clusters could be a suitable strategy for small niche ports within the Channel region to successfully face the challenges highlighted. The expectation is that by encouraging port centric cluster formation local ports can develop energy and cost efficient transportation of goods. This will enable smaller ports to strengthen their role within a wider transport network thereby encouraging the growth of businesses working in the port environment. This report documents research undertaken to identify existing evidence of the presence of port centricity within the Channel's small, niche ports by meeting the following research objectives:

- 1) Identify whether there is evidence of port centric cluster formation in small niche ports across the Channel region.
- 2) Examine the factors influencing the formation of port centric clusters
- 3) Evaluate the challenges facing the development of port centric clusters in the Channel region.
- 4) Generate recommendations as to how the formation of successful port centric clusters could be facilitated.

3. RESEARCH METHODOLOGY

In depth interviews were conducted with representatives from a number of case study sites across the Channel region. The case study ports selected were Dover, Shoreham, Newhaven, Portsmouth, Saint Brieuc, Saint Malo, Ports Normands Associés (Caen & Cherbourg-Octeville), Dieppe, and Calais (Figure 1).



Figure 1: The Location of Case-study Ports

The main purpose of each case study was to explore the development of the concept of “Port centric clusters”, which highlights the potential for ports and their stakeholders to collaboratively establish businesses in a port area. The interviews focused on a range of issues linked to port centricity, including:

- Business development,
- The current state of collaboration and application of port centric logistics,
- The promotion of cross Channel trade,
- Current infrastructure facilities and implications of future developments,
- Opportunities for innovation for both the ports and their stakeholders,
- Competitiveness
- Management of staff and the strategic vision of each port, and;
- The impact of longstanding association with transport on the development of port centric clusters.

4. RESULTS AND DISCUSSION

This section of the report outlines the findings of the research, presenting the forms of port centric clusters identified in the Channel region, using examples from both the French and the English case studies.

4.1. Emergence and Evidence of Port Centricity

Based on the research, it is evident that port centricity plays a clear role in the ports of the Channel region. Through the case studies, there was evidence to support the definition of seven cluster types present in the Channel region, which are discussed in the following sections. While each of the cluster types brings their own specific advantages, this form of activity was also seen to be of benefit through: fostering significant cooperation between the two port sites, encouraging economic development of the port and generating new job opportunities for the local community.

4.1.1. Value Chain Clusters

Value chain clusters are most commonly comprised of companies/ businesses that add value to the products being imported or exported through a port. These companies play a significant role within their individual supply chains, and can have multiple roles within the import/ export process. Value chain clusters benefit port communities, as by adding value locally, companies can reduce associated processing and transport costs, as well as improving company productivity and supply chain efficiency. By vertically integrating activity within the port site, value chain clusters can positively impact the overall transport system by removing unnecessary transportation of freight, reducing truck miles and congestion, therefore limiting environmental impacts, such as greenhouse gas emissions. Examples of value added cluster activity include:

- 1) Temperature Controlled Goods—a company controls a substantial part of the supply chain around the port including storage, transport, sales, packing and marketing. Limited transportation required from port to final destination and valuable time is saved.

- 2) Raw materials—timber, steel, etc.—as with above but raw goods can be transformed before moving to retail. Reduces the need to transport and utilises local trade.

- 3) Food—grain and livestock—port/local companies provide grain drying facilities and can package for animal feed or add value in local area using local slaughterhouses, food manufacturers etc

The **Port of Shoreham** engages in three main areas of value adding processes associated with the transportation of steel, timber and grain through their port. For example, the Port of Shoreham supports a steel processing business, which until recently imported steel to a number of smaller ports before transporting the steel to Kent for processing. Recently, however, the processing plant was moved to Shoreham, creating new job opportunities for the local community, while generating additional income for the port through land rent, as well as shipping and unloading charges. In addition, by focusing activity in one place companies can transport products directly to customers from Shoreham, rather than via an alternative site in Kent, reducing the costs of both customer and supplier, reducing truck miles, decreasing the level of congestion on roads around the port and increasing overall efficiency of both the processing and transportation process.

In addition to steel, Shoreham Port also supports a value adding grain processing plant and timber distribution. The timber processing businesses mark a valuable diversification of port activity, as by providing the suppliers with a storage facility on the port site, the port gains a secondary role in the supply chain, generating additional income. In effect the port is acting as a wholesale timber company, expanding their role from being solely a handling agent to being a fully-fledged business within the supply chain. By facilitating storage on the port site, the port provides a necessary service for local customers, reducing the cost of transport for customers, encouraging growth and development of the port itself and decreases the pressure on the local transport infrastructure. Further to this, the port supports an additional business using returning empty ships to transport wood chip produced from waste wood from the local Sussex area. By encouraging multiple uses, the port is strengthening their position as a major

port within the national and European transport networks, while simultaneously supporting a more efficient and sustainable transport network around the local area of Shoreham.

4.1.2. Green Clusters

Green clusters are comprised of companies located within ports that focus on environmental or 'green' initiatives, such as:

- Renewable energy production,
- Construction of energy efficient, low carbon buildings,
- Environmentally friendly technology and ship designs,
- Reuse and recycling of ships and other waste material,
- Waste management and;
- Training and development linked to environmental initiatives.

By working together in environmentally focused port centric clusters, businesses can ensure that ports are actively engaged in initiatives that support environmental protection and sustainability, whilst supporting growth and development in the area. Additional benefits associated with green clusters include:

- Low levels of greenhouse gas emission by working towards a carbon neutral business,
- Aiding local communities to meet local renewable energy requirements,
- Creation of new jobs associated with new technologies and
- Supporting local economic growth and development.

Increasingly it has been found that companies within ports are aware of their environmental obligations, and of the value, adopting green practices can bring to their business by attracting environmentally conscious customers. It is suggested that by supporting the development of green port centric clusters, ports can tap into a new customer base, attracting new companies to the site, encouraging innovation from companies in a bid to meet goals set by environmental policy and to provide companies

with the an opportunity to increase their own green credentials. The natural positioning of ports emphasises their role as coastal stewards and businesses within green clusters have the opportunity to collectively influence education and training to ensure ports operate in an environmentally sustainable manner.

A particularly successful example of this type of cluster was identified at the **Port of Shoreham**. The port has entered into a long-term collaboration with a FTSE 250 company, and committed to making the port a centre for low carbon energy production by providing space for development of infrastructure, funded by the other partner. By collaborating with this large company, the agreement is expected to attract more renewable energy and green initiative focused companies, thereby allowing the port to meet local energy requirements, whilst supporting economic growth and job creation in the Shoreham area. Additionally, the **Port of Portsmouth** has recently constructed a new green passenger terminal, adopting a range of innovative green technologies and infrastructure which will require on-going maintenance, supporting local businesses in the longer term.

Through the French case study research, **the Ports Normands Associes of the Ports of Caen-Ouistreham and Cherbourg-Octeville** was identified as supporting a green port centric cluster with a particular focus on offshore renewable energy production. The ports' unique, cooperative management structure fosters effective collaboration and cluster based activity between the ports, allowing the Ports Normands Associes to offer end-to-end service to companies within the renewable energy sector, attracting large companies to the port, including EMF Alsthom and WPD. The ports take advantage of their position on the coast (i.e. close proximity to the Courselles field), accessible and available harbour and storage areas, as well as additional port services that can support the renewable energy sector, including port safety, towage and ship maintenance.

4.1.3. Tourism clusters

Many of the ports in the Channel region are involved in passenger transport activities, strongly linking the port to local tourism. As a result, ports can act as a focus for local tourism related companies and service providers, such as hotels, restaurants, visitor

centres and leisure centres. These associated businesses can create job opportunities for the local area, contribute significantly to the local economy and positively influence the wider transport network. By establishing attractive local tourism clusters associated with the ports in the Channel region, impact on the broader road network linked to the port will be reduced as traffic will remain in the local area, rather than travelling further afield. While this may increase traffic within the area directly linked to the port, the advantages associated with the business growth potential outweigh these concerns. The research found that tourism clusters benefit significantly from leadership and support from local authorities, with growth directly linked to active promotion of tourism in a port's local area.

A key example of a successful tourism cluster directly linked to the port is that of the **Port of Dover**. The development of a tourism focused port centric cluster was facilitated by extensive support from Dover District Council which is working to regenerate the area and establish Dover as a tourist destination. By working with the port and the ferry companies, the Council has been able to establish a 'destination' marketing based strategy, promoting the local area as a tourist attraction, and generating a tourism proposal to include infrastructure development, improvement of the water front, and establishing leisure centres, marinas and other facilities. By engaging with local companies to create this form of cluster, the relationship between the local community and the port will be improved, encouraging a more collaborative relationship, fostering improved business relationships, which will lead to a better promoted tourist destination. This type of cluster activity can raise the profile and act as tool of regeneration and diversification for port communities, creating economic growth and job opportunities for the local communities, as well as the port.

Brittany is ranked 4th amongst the tourism regions of France, and facilitates two clear examples of port centric clusters focused on tourism: **Saint Malo and Saint Brieuc**. The first example, **Saint Malo**, has long maritime history and, as a result, it is one of the most visited sites in Brittany, with port activity dominated by passenger transport. This port town exhibits strong cross Channel links, being the number one tourist port in Brittany in terms of passenger numbers and is well known for its historical citadel, attracting high numbers of tourists to the area. In addition, the port is one of the key

stopovers for cruise companies, with visitors remaining in the local area to see the various places of interest, including: Saint Malo, Mont St Michel and Cancale. Business activity within the town has been supported by the port, through promotion of the local attractions and longstanding heritage, and developing tourism related infrastructure for visitors, such as restaurants, cafes, and hotels, and promoting the attractions in the local area. By working to promote the local area, visitor numbers are retained in Saint Malo, supporting local businesses and fostering economic growth in the local area.

The **Port of Saint Brieuç- Le Legue** is located on the Cote d'Armor, an attractive tourist destination, popular as a second home location where tourism is becoming an increasingly important maritime sector. Although **Saint Brieuç- Le Legue** has traditionally been a commercial port, it is an important centre for sailing and marine recreational activities, and is particularly attractive to those from inland France. In a bid to attract more visitors to the local area, the port has built on its marine leisure activities and developed the local economy through providing services associated with tourism and recreation, including boat maintenance and repairs, recreational facilities and restaurants for visitors, as well as recently building a new marina, dry docking facility and a dedicated area for related services. The development of the new marina has created new links with local businesses, stimulating economic growth and development within the town, and efforts are being made to promote collaboration between the marina, the port and the local community.

4.1.4. Port related service clusters

This cluster type is associated with the expansion of port related services, including: pilotage, towage, mooring, dredging, bunkering, cargo handling, stevedoring, and passenger related services and cargo storage. Research has shown that in the case study ports, these services are commonly provided by the ports, or outsourced. This type of cluster strengthens the role of the port within the local area, providing multiple services to port users, generating additional income for ports and creating jobs for the local community. By providing a port centred service provision the facilitation of training and knowledge transfer can take place. This will ensure port users and local businesses will be made aware of essential regulatory issues and can be up-skilled to

ensure compliance. The benefit of this knowledge sharing to the port will be in the form of a safer and more efficient working environment. Local businesses will benefit from the reduced cost of training, regulatory awareness and compliance, and increased opportunities for growth and procurement.

Although identified as a cluster type, there was limited evidence of this type of cluster being currently active on the English side of the Channel. However, the research did suggest that ongoing developments will encourage ports to provide additional services to their customers, encouraging additional business to the port. For example, the new green passenger terminal in the **Port of Portsmouth** has adopted innovative technologies which will require maintenance and may undergo on-going development in the coming years. This new facility and its needs have the potential to attract new and innovative businesses to the port, supporting the specific services required to maintain the port infrastructure. Additionally, the **Port of Dover** has proposed the development of a new port facility, which will encourage new and additional businesses to the overall port site by creating additional capacity and infrastructure for businesses. Depending on the needs, skills and resources available within the local community, these businesses could be directly or indirectly linked to the port, and could engage with existing trade and transport moving through the port. By working with the local community to identify opportunities, this type of cluster activity has the potential to take on an active role within the supply chain or import and export network across the Channel.

The **Port of Saint Briec** can be considered an example of a port related service cluster, where efforts are being made to ensure the port can provide customers with all of the services required linked to the port's dominant activity of sailing. The Chambers of Commerce, as Port Authority, have supported the development of a diverse range of services and businesses within the port area including encouraging small maritime businesses, such as mechanical workshops and ship repair businesses, to locate themselves within the port region. Investments have been made to ensure the port is attractive to visitors and investors, as well as an area of sailing expertise, and developments have also included the development of small general business facilities. It is evident that working closely with the port has allowed the authorities to determine

where its strengths lie, fostering collaboration between the port, local businesses and the local authority so as to support economic growth and development across the local region.

4.1.5. Innovation clusters

The fifth form of port centric cluster identified by the research was that of innovation clusters. This form of cluster is formed when ports, their stakeholders, universities/ educational establishments and research centres collaborate on new and innovative technologies/ processes for use within the port sector. This type of port centric cluster was found to be quite common across the case studies.

The research found evidence to suggest that each of the four UK case study ports are engaged to some degree with an external research or education centre, creating small innovation clusters. For example, the **Port of Dover** was found to have strong links with the Universities of Cardiff, Kent and Greenwich, with students from these institutions engaging in placements on site at the port, and working with MBA students on port related research. A further example of this could be found at the **Port of Shoreham** where the port supports mutually beneficial research projects conducted in collaboration with local universities, including the University of Brighton.

4.1.6. Fishing clusters

Fishing clearly has a long historical link with the port sector; with fishing companies located in port areas serving local hotels, restaurants and community as well as exporting produce to neighbouring countries. With fishing being a regular activity within the Channel's ports, supporting the development of fishing clusters has the potential to be of significant benefit to both the member businesses and the wider port community, while positively influencing transport around the port. Fishing clusters could support docking of fishing boats, landing of catch, sorting and processing of produce, as well as exportation. By centralising the activity associated with the fishing sector, the sector has a minimal impact on the local community transport network, positively impacting congestion in the surrounding area. Additionally, exporting landed

catch to neighbouring countries will be transported by ship, limiting the number of truck hours required.

An example of port centric activity focused on fishing activity was seen at the **Port of Shoreham** where a range of activity is supported. Of particular interest is the link between local fishermen and the local restaurants, which ensures that the local fishing community is sustainable. This is supplemented by larger fishing trawlers which supply the export market with customers in Belgium, France and Spain. In addition, the port has a good working relationship with the processing warehouse located on site; a relationship which has the potential to encourage a cooperative approach to fishing activity in the port. By supporting both local and export activities, the port ensures that the fishing community in the area is economically viable and can be sustained.

The Port of Dieppe is the leading fishing port in the Haute-Normandie Region, and is France's leading port for scallop fisheries, meaning it is of significant importance to both the local and national economies. The port supports a diverse range of fishing activity, including trawlers, shell fishing vessels and gillnets fishing vessels, and with an on-going policy for supporting fishing activity in place. The port has worked to promote Dieppe as an area of fishing expertise, and as well as supporting fishing vessels, it has developed a fishing sector technical area within the port site. Among other things, this area houses lifting gear with the capacity to lift vessels of up to 400 tonnes. By supplying this type of infrastructure, the port is actively supporting the various ship repair and maintenance businesses that have set up to service the fishing fleet. Additionally, in modernising the facilities available within the port, the role of the Port of Dieppe in the wider supply chain has increased. For example, the provision of additional capacity for processing fish products and the development of an 870m² refrigerated, covered market area, has allowed the profile of Dieppe as a centre for fishing expertise to grow. Further to this, the port has adopted new technology that allows the onsite market to link with buyers further away, with computers linked to auctioneers in Fecamp allowing the fishing cluster to sell to both local and regional restaurants. These investments in the fishing industry found within the port have ensured sustainability for the fishing community, encouraging economic growth that benefits both the port and the local community.

4.1.7. *General business clusters*

A final cluster type has been identified as general business clusters which includes businesses that are usually indirectly related to port activities, and do not fit within any of the other cluster types. These clusters typically focus on activities such as supporting local businesses through the development of a business park or acting as a focal point for the engagement with the local community through community centres, residential buildings, or interchanges for local transport networks. Businesses within these clusters will most commonly provide services that support one or more of the other port centric clusters. Clusters of this type can support training and skills requirements for the port on areas such as marine safety and provide additional services to the port. The benefits of this type of cluster include the creation of jobs within the local community, supporting the economic growth and development of both the port and the businesses within the wider supply chain, contributing significantly to the local economy.

As discussed above, this type of cluster supports activity that may not be directly related to the activity of its port. Examples of this within the UK case study research include the **Port of Dover**, which, in collaboration with Dover District Council, has put forward plans to develop a business centre within the port site (White Cliffs Business Park), which will offer commercial space to a range of businesses. The provision of this type of facility will raise the profile of the port as a premier business location for Dover and the surrounding area, with the potential to create up to 3000 jobs. In addition, Dover District Council are working to generate town development facilities in the port, including residential buildings, council buildings, as well as an educational and skill development centre which will provide training linked to maritime industries. The Council clearly sees the potential value of the port site; by developing the port in such a way that it can provide for a range of businesses, it encourages collaboration between the port and local businesses, creates job opportunities in the local community and fosters general economic growth and sustainability. A further example of this type of activity could be seen in the **Port of Shoreham** which appears to be working towards supporting a general business cluster, with the port aiming to utilise port resources to establish an incubator and a training centre. By providing these types of services, ports

are encouraging new businesses to their site and can serve other port centric clusters through training sessions and skills development. Cluster activity of this type allows the port resources to have multiple uses, supports the development of alternative business activities, while encouraging overall economic growth of the sector and of other port centric cluster activity.

A particularly good example of a general business cluster within the French research was identified at the **Port of Saint Breiuc**. While the port is a well-known area of expertise in terms of sailing and marine leisure activities, the port site also provides facilities for alternative business development. Investments have been made to redevelop previously rundown warehouses on the port site, making them attractive facilities for local businesses. Currently, these developments house a television studio, some commercial outlets, a restaurant and an education facility. While these businesses are not directly linked to the activity within the port, they can bring an additional source of income to the port, indirectly impacting other businesses and activities. In terms of their overall impact, this use of the port as a business hub or incubation site supports local businesses within the town, increases the role of the port within its local community, encourages more widespread communication between the port and the local businesses, fosters economic growth and has the potential to support job opportunities for the local community.

5. Challenges impacting Successful Port Centricity

As discussed in the introduction, ports across the Channel region exhibit a number of differences, particularly in terms of their ownership, governance and funding regimes. It is apparent from this research that ports also differ in terms of their trade links, physical harbour characteristics, local demographics, and stakeholder relationships. Each of these factors has the potential to impact the successful development of effective port centric clusters and the growth of the smaller, niche ports found in the region. In particular, the primary challenges identified as impacting cluster development were identified as:

- A lack of space and capacity for development within the port site
- Insufficient facilities to support development of new industry relationship or adapt to new transport/ logistics requirements
- A common lack of coherence between port and local development plans
- Perception of national and European legislation as being a barrier to development of port sites.
- A lack of awareness and/or understanding of the opportunities available through successful implementation of port centric clusters.
- Poor links with the local community, in terms of skills and expertise availability.
- Historical conflicts between surrounding residential areas and the development of port sites.
- Perceived issues associated with Health and Safety controls and mixed use sites.
- A lack of a comprehensive framework to support the successful development of port centric clusters.

Overall, the main challenge to port centricity appeared to be a lack of understanding as to its value to the port, and the surrounding community. By establishing port centric clusters in the smaller, more specialised ports in the Channel region, their position within the wider, European and international transport networks can be strengthened,. The recommendations presented in Section 6 outline how this could be achieved for the small niche ports within England and France.

6. RECOMMENDATIONS

The research identified seven distinct port centric cluster types, suggesting that ports are moving towards a more integrated, holistic management approach. The findings of the research suggest that port centric cluster formation is an appropriate strategy for small and niche ports in the Channel region, supporting competitive advantage of the ports, encouraging the development of an effective and sustainable transport network, reducing traffic congestion, reducing costs for ports and their businesses and supporting local business development and economic growth. A number of recommendations supporting the formation of port centric cluster formation have been

generated through the research. These recommendations can be viewed from two perspectives:

- 1) Support for each of the seven cluster types.
- 2) Supporting the overarching port centric process

6.1. Recommendations for Port Centricity in the Channel region

Although specific recommendations have been made for each of the identified cluster types, the research has also generated further recommendations in relation to the overall concept of port centricity and the actions necessary for the successful implementation. These recommendations are discussed below:

- The research has shown the importance of ports working closely with local authorities to build coherent plans that can realise benefits for the ports, their businesses, the local community and encourage economic growth. Therefore it is recommended that incentives encouraging collaborative projects be introduced, providing support for companies interested in engaging in collaborative activity. Additionally, it is recommended that efforts be made to ensure companies are aware of potential funding sources, and collaboration opportunities available.
- In order for port centric cluster activity to be successful, ports need to have an in-depth understanding of the type of freight it handles, as well as an awareness of the wider supply chain. Ports need to understand where they sit in their supply chain to identify where and if it can expand their role within the supply chain. It is also recommended that it would be useful for ports to research what goods and materials are grown, produced and processed locally to allow potential market and supply chain opportunities to be identified.
- In order for the benefits of forming port centric clusters to be realised, it is suggested that a supportive, streamlined framework be developed. The multidisciplinary nature and relative youth means port centricity is a complex concept, with numerous government departments involved in the sector. To date,

there are no guidelines in place to support those seeking to develop port based cluster activity, meaning that stakeholders attempting to form clusters have come up against difficulties in interpreting legislation and seeking planning permission. By developing guidelines and a standardised framework, stakeholders can get information on gaining planning permission and advice on how best to interact with numerous stakeholders.

- Additionally, the research found that if port centric clusters are to be a successful addition to the overall transport network and economic growth of the Channel region, stakeholders and ports must be supported through new environmental legislation implementation, and the necessary innovation required to meet legislative obligations. It is suggested that ports and their businesses be provided with resource support, such as funding to support innovation, to allow them to develop and grow alongside meeting their environmental obligations.
- Through the research, it was evident that the concept of port centric clusters was new to a number of stakeholders, suggesting businesses may not be aware of the opportunities associated with this type of activity. Given the benefits of linked to port centric clusters through the research, it is recommended that regular promotional workshops are run to raise awareness and guide businesses through the development process. By encouraging businesses to work together, the profile of the area as a whole can be raised, innovation encouraged and skills and resource gaps identified and addressed.
- Given that ports are often positioned at a confluence within the wider transport network, the research evaluated the links between clustering and road/ rail transport. It is suggested that rail networks only be developed where companies within a port cluster are engaged in long distance transportation of goods. In order to reduce traffic congestion, impact on the community and costs for businesses, it is also recommended that governments should encourage companies to use rail rather than road, using tax based incentives.

- Given the cross border nature of the research, it is recommended that policies be put in place that support collaboration between port centric clusters located in one or more countries. By linking the ports in this way, it is suggested that more coherent and integrated infrastructure development plans can be implemented, such as Ten-T programmes.

- A number of both national and European policies can be interpreted as being in support of the development of port centric clusters, including the EU Blue Growth Strategy (2012) and the EU Integrated Maritime Policy. These policies view clusters as a tool through which a number of objectives can be met: reduction of carbon emissions, development of the maritime sectors supported within a port environment, generation of renewable energy developments, and overall sustainability of the maritime sector. However, in spite of this support, the research has found that currently small, niche ports are not in a position to compete and collaborate with their larger counterparts, or with the national clusters being developed. The development of successful port centric clusters can give ports a louder 'voice', raise their profile and place them in a more competitive position with greater capacity to collaborate on a local, national and European level. Therefore it is the recommendation of this research that efforts be made to interpret EU and national policies in such a way that supports port centric cluster formation on a local level, building relationships between local authorities, ports and their associated businesses.

- Finally, a number of strategies that could be adopted by ports to encourage the formation of port centric clusters were identified through the research:
 - Introduction of new technologies to adhere to new policies and address new market requirements e.g. the MRE market.
 - Active promotion of port centricity to attract new members to clusters through workshops and networking sessions.
 - The formation of partnerships between ports and their businesses, or between two or more ports to increase knowledge exchange and opportunities for collaboration.

- Ports should encourage flexible usage of space to foster diversification of business activities within the port environment.
- Identify niche business opportunities and capitalise on these to encourage economic growth of the port, reduce pressure on and ensure efficiency of the wider transport network.
- Encourage vertical integration of activities within the port to strengthen the role of ports within the supply chain.

6.2. Recommendations for each cluster type

As there were seven cluster types identified, it is sensible to assume that each cluster type will require specific actions to support their development, ensure they are sustainable and realise benefits for both the port and the local community. Therefore each cluster type will be dealt with individually.

1. Value Chain clusters

In order for a value chain cluster to be successful, the port needs to facilitate a value adding process within a wider, open and inclusive supply chain. Depending on the resources and the trade passing through the port, opportunities will differ in each site, and therefore the support required for successful clusters will vary with each port. This will depend on a number of factors including the scope of the supply network, the nature of the value added process and the required skills and resources. For clusters of this type to be successful, ports and their businesses would need to work together to identify a common opportunity, engage in open communication with local businesses and potential stakeholders and identify and address any potential barriers to involvement. Support from policy for this type of cluster is likely to be limited, and it is the recommendation of this study that establishing effective communication with stakeholders be the first step in the cluster formation process. By engaging in knowledge transfer and building relationships with local businesses, opportunities for all parties will be identified and will foster a more collaborative approach to progress. Working with local authorities can add support to development, as they can use their power to attract specific industries that are identified.

2. Green clusters

In contrast to value added clusters, the primary driver for green clusters is the presence of incentivising policy, encouraging the port and businesses to consider an environmentally favourable approach to their operation. It is recommended that in order for this to be effective, strategies should both reward and penalise stakeholders. Management and promotion of green cluster activity needs to be supported by local, national and European policies and should be reinforced by a local authority driven call for enhanced collaboration between ports and their businesses. In order for clusters of this type to be effective, it is vital that information is made accessible and readily available and that effective communication mechanisms are used to promote activity. The current agglomeration of interest groups, policy regulators and support associations makes the coordination of eco efficiency difficult. It is suggested that the establishment of a single body charged with green growth promotion and management would provide an overarching focus for policy. Further to this, it is recommended that a number of enabling factors are established to support green activity in the Channel region, including: improved monitoring and communication of green growth policies, improved understanding of green activity supply chains, development of government led incentives to encourage green activity within the port sector, opportunities associated with marine renewable energy and offshore wind farm development, and opportunities around desulphurisation and producing land based scrubbers.

3. Tourism clusters

Ports with high volumes of passenger traffic are in an optimum position to take advantage of local tourist attractions and should be aware of the tourism related industries in close proximity to the port. Ports have the potential to play a significant role in overall destination marketing of their local area. Therefore, it is the recommendation of this research that for tourism focused port centric clusters to be successful, local authorities must facilitate effective communication between local stakeholders (including tourist boards, ferry companies, local authorities, English Nature, local attractions) and should encourage 'joined up' thinking between all actors. It is also the recommendation of the research that tourism in the area can be boosted by

adapting port infrastructure to promote local attractions, including port signage, directing traffic to local areas rather than onto the broader transport network and ensuring that the local transport network is maintained and made attractive to visitors along the transport routes.

4. Port Service related clusters

Port services clusters develop around businesses that support port operations and provide additional services to customers, such as storage and ship maintenance. In order for port service focused clusters to be successful, they need to be underpinned by effective and open communication of opportunities. It is recommended that ports interested in engaging in this type of collaborative activity develop a centralised knowledge bank of information detailing opportunities and service providers, allowing potential partners to communicate and market opportunities to be developed. In addition to working with port based companies, there could be potential for local businesses to engage with a cluster of this nature; however, this would require opportunities to be well communicated. For this to be achieved, local authorities need to be better informed about services provided by ports and opportunities available, and should act to facilitate cooperation between businesses. Finally, it is suggested that having a comprehensive bank of knowledge, such as a detailed database specific to each port, regarding the port services could aid a port's ability to attract both local and foreign investment.

5. Innovation clusters

Engaging in an active innovation cluster has the potential to be a change in direction for ports, encouraging diversification of activity, and can place the port in the role of a supporting mechanism for policy initiatives. For a port to support a successful innovation cluster, their focus should be targeted at what the community currently offers, with efforts made to evaluate what could potentially be offered and how this could benefit the port, local businesses and local community. Additionally innovation can be driven by policy initiatives as has been seen in the MRE sector. In order for innovation clusters to be successful, they need to meet a demand or a gap in the market;

therefore it is recommended that ports interested in this type of activity build awareness of current capacity for innovation and of the potential barriers to growth. In addition, it is recommended that innovation clusters be supported through policy and funding incentives to ensure local needs are met, as well as meeting national and EU policy requirements (for example, policies relating to MRE and tidal innovation, desulphurisation of fuel, environmental research, implementation of MPAs).

6. Fishing Clusters

Due to their long standing links with ports, these historic clusters are unlikely to be developing markets. However, fishing remains a vibrant maritime sector, and one that is intrinsically linked with the Channel's ports. Therefore, where there are fishing clusters it is important that these are supported to ensure their sustainability. The research has shown that continued knowledge sharing regarding relevant legislative changes and environmental concerns facing the sector, as well as innovative market opportunities, can strengthen the fishing sector within a port. Clustering in this way would be of particular benefit to small scale businesses can use the clusters as a way to raise their profile, reduce their costs and take advantage of collaborative resources. EU fishing policies are currently in a state of change and should be adapted to ensure they consider the needs of these local businesses within niche ports, as well as national and European obligations, and should develop policies which incentivise fishing businesses to work together to encourage growth, sustainability and innovation, while retaining their valuable role in the wider port sector. In addition, it should be noted that fishing activity can contribute to science and conservation of marine ecosystems, through their collaboration with universities and involvement in research. Finally, the support of a fishing cluster can add enhance an area's reputation, particularly through supplying high end markets with local sourced, sought after fish.

7. General Business Clusters

General business clusters are the most varied type of clustering activity identified through the research, and can be considered the most difficult to support. They can, however, be one of the more valuable cluster types, often having particularly strong links with the local community and its businesses. It is the recommendation of this

research that national and European policies consider the local needs, in addition to those on a more international platform. There is a number of trading and business opportunities afforded to smaller, niche ports on a local level, and these ports provide a valuable service and vital transport link to a many local businesses. It is the recommendation of the research that local authorities make considerable effort to engage with their ports, and to foster effective communication between the port and businesses in the surrounding communities, encouraging collaboration, innovation, knowledge exchange and identification of market opportunities on a local scale.

7. CONCLUSIONS

Throughout the research, it was evident that ports in the Channel region appear to be moving towards a more holistic, port wide approach to management, inclusive of all businesses supported by each port site. By developing effective and successful business clusters within the port sector, relationships between associated and supporting businesses can be improved, and prove to be mutually beneficial for all members.

As with all forms of cluster development, there are a number of challenges to be addressed in order for port centricity to be a mechanism of successful growth and development. Successful port centric cluster formation is dependent on effective knowledge exchange and access to information about the services provided by a port and opportunities for collaboration. It has been found that knowledge of processes, opportunities and support availability will increase the ability of small niche ports to focus on their communities and of both port and local businesses to engage with ports. Allowing small ports to develop port centric based plans will strengthen and sustain them, encouraging their inclusion in a wider, more international cluster.

It is the recommendation of this research that the EU recognises the role of ports in their local communities, in terms of regeneration, economic growth and job opportunities, rather than solely playing the role of a small transport hub in a wider global transport network. Unlike many other forms of transport, ports have the capacity to play a variety of roles in their community and this diversity should be supported. For example, a short sea shipping (SSS) policy can only be successful if the

capacity for value added processes is in place around the ports. Desulphurisation of fuel can only be supported if the innovation to drive technology developments and alternative fuel sources are provided, with ports playing an essential role in this process. This should be achieved by involving the local authority development plans in the process.

Finally, in conclusion, it is the view of this research that the implementation of EU policy directives, such as the EU Blue Growth Strategy, will be supported by strengthening the role of small local ports, with each individual hub within the network adding to the overall sustainability of the network.

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