



DEFRA PROJECT FO0108

**RESILIENCE OF THE FOOD SUPPLY TO
PORT DISRUPTION**

**FINAL ANNEX REPORT 6:
IMPORT CORRIDOR: HUMBER
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1. EXECUTIVE SUMMARY

The Humber ports handle 19%, by volume, of all UK maritime imports with high volumes of liquid and dry bulk fuels. Its importance as an entry point for unit load traffic is evident in the fact that 19% of all UK foreign trailer-based imports enter the country through Immingham, Killingholme and Hull.

Roughly 11% of the UK's foreign imports of food come through the range of major Humber ports and smaller terminals and wharves along the River Humber and River Trent, with EU and non EU food imports among the 3.7 million tonnes, being of equal significance compared to the UK's total food imports from EU and non EU sources (also 11%).

The importance of fish imports (mainly in containers), palm oil and sugar is evident. In addition to container loads of fish from Iceland and Norway there are estimated to be 50 containers per week arriving in Immingham from China and the Far East on deep sea feeder services. There are also 50 container loads of sugar arriving from Mauritius every month and around 400,000 tonnes of edible oils (60% palm oil) being received at the AAK plant in Hull.

The ports and wharves on the Humber and Trent are also an increasingly important entry point and storage point for imported agricultural bulk product (mostly grain), with an estimated 1.22 million tonnes passing through the Humber in 2008 from EU origins alone (Ref. *UK Food Security Assessment*).

The range and diversity of shipping modes handled in the Humber and Trent provides some degree of internal resilience, as vessels and traffic could transfer from one Humber port to another if local disruption occurs and there are examples of this happening when short term lock gate repair and maintenance has taken place. However, the need for specialised storage and refining facilities (palm oil) and deep water berths with port-side silo storage (high volume grain imports) can make internal transfer impossible and even external transfer very difficult.

Associated British Ports has confidential Business Continuity Plans in place in the event of incidents and disruption but port disruption is relatively rare and importers and cargo handling operators tend to concentrate on day to day commercial imperatives rather than planning for marine side disruption that they consider the Port Authority in conjunction with Resilience Planning Groups will deal with.

Disruption to road haulage services, through industrial action, fuel shortages and driver shortages would severely disrupt port activities.

Whether it is local disruption or disruption affecting the whole Humber Estuary there is a demand for a more detailed appraisal and modelling of short sea RoRo and container service provision and the alternative options available in the event of disruption. This report improves the general understanding but more detailed verification is required in terms of available capacity on other routes and at other ports and the ability to transfer freight and/or shipping services and vessels to other ports.

The type of disruption scenario and its consequences are different for the Humber and the Thames and Medway compared to a 'Dover' or a 'Felixstowe' situation. For the Humber and Thames/Medway the disruption could be at a single berth or terminal or it could extend to the whole port complex, across a range of shipping modes and freight commodities. There will be different types of exposure to disruption within the port complex and a greater spread of resilience in terms of a transfer between ports and clusters of terminals.

In the Humber and Thames / Medway there is not a focus on a single high density traffic flow, as there is in Dover or at Felixstowe. The Humber and Thames offer a range of facilities and services for different types of cargo (not single high density flow), similar to other key UK estuaries (Tees, Tyne, Forth, Mersey, Severn, etc.). There is security in the direct availability of alternatives but insecurity in terms of the overall scale and concentration.

2. INTRODUCTION & ACKNOWLEDGEMENTS

The Humber Case Study subjects relevant to food imports, along with the Thames and Medway Case Study subjects are more diverse in nature compared to the RoRo ferry and accompanied trailer focus of the Dover and Channel Tunnel Case Study and the deep sea container focus of the Felixstowe and Southampton Case Study.

The Dover and the Channel Tunnel routes are almost entirely dominated by the accompanied trailer mode linking the UK and Continental markets, moving on the Dover ferries or the Eurotunnel Freight shuttles. For Felixstowe and Southampton the key transport mode is containers carried on high capacity, deep drafted container vessels. If disruption occurs on these two routes the problems amount to identifying alternatives for RoRo ferries and accompanied trailers, or the freight carried in those trailers, in the case of Dover and the Channel Tunnel; or finding alternative ports for vessels and secondary transport modes for the containers that would otherwise discharge and load at either Felixstowe or Southampton.

Neither of these disruption scenarios is any the easier for being a 'single mode' issue but in the Humber and the Thames and Medway, disruption will impact upon RoRo ferry operations, deep sea, short sea, and deep sea container feeder operations; and on both dry and liquid bulk operations, all carrying significant volumes of food commodity imports. The same features apply for other key UK estuarial gateways, such as the Tees, Tyne, Forth, Clyde, Mersey and Severn.

The question for the Humber is whether alternative facilities and capacity exists within the estuary if the disruption is restricted to a single port or terminal, or whether alternative capacity is available at different ports for the range of traffic modes being catered for if the whole estuary is disrupted. The reverse situation, for both the Humber and the Thames and Medway estuaries, is whether and how the available RoRo ferry and container vessel capacity can contribute towards handling re-directed traffic should disruption occur at either the primary accompanied trailer corridor across the Channel or the key deep sea container corridors through either Felixstowe or Southampton.

This Case Study, through research and consultation, identifies the food import terminals on the Humber and quantifies the scale of their operations. Specific food commodity concentrations are exposed and the security of supply in the face of disruption is examined.

The range of ports and terminals handling food commodities, either in bulk, or in trailers and containers, is examined in Section 2; and the available vessel and cargo handling capacity is assessed and compared in Section 3. For RoRo and container handling operations the available capacity is compared with alternative infrastructure at other UK ports.

Capacity, resilience and transferability issues surrounding the palm oil import facility at AAK's Hull Dock terminal and sugar imports through Immingham are assessed in the respective palm oil and sugar food commodity case studies (**Annex 9** and **10**).

The importance of the Humber (and Trent) food import terminals in terms of volumes and commodity breakdown are assessed in Section 4 and Section 5 examines the whole question of port flexibility, based upon research results and feedback from consultations. Issues and concerns about supply and potential disruption scenarios will be assessed and the practicality and feasibility for vessel and cargo transfer to other ports will be examined, by broad commodity type.

A general food supply resilience assessment for the Humber is signalled in Section 6 but the detail behind the assessment, particularly for palm oil, sugar, and fish will appear in the appropriate food commodity Case Study Annex reports.

A concluding, Section 7, summaries the Messages and Findings arising from the research and consultation, highlighting particular facts, issues, potential responses and requirements for further investigations.

3. SECTOR OVERVIEW

Unlike at Dover and the Channel Tunnel, or at Felixstowe and Southampton, in the Humber River and estuary and the River Trent no one shipping mode dominates and there are a range of food import facilities and terminals, albeit with specialist facilities for edible oils (palm oil), incorporating vessel handling and cargo discharge, storage, processing and onward distribution. These particular specialist facilities have a strategic importance for UK food supply because of throughput volumes and the shortage of suitable alternative facilities at any other UK port.

There are three concentrations of operational RoRo berths, for general commercial traffic, in the Humber: at Immingham (3 river berths and 6 in-dock berths); Killingholme (6 river berths); and Hull (11 in-dock berths and 1 river berth). There are also in-dock RoRo berths at Grimsby and Goole but there are tidal restrictions, which is why there are plans to develop additional RoRo berths in the river and outside of the lock gates at Grimsby.

Short Sea intra-European and deep sea feeder container trades are served by a total of 7 container gantry cranes in Hull, Immingham and Goole, along with mobile cranes dedicated for purpose in Goole and Immingham. Hull and Goole deal primarily with intra-European services, while Immingham has become a centre for deep sea feeder services.

These RoRo and container terminals receive food imports in unit load mode and key commodities received include fresh and frozen fish from Norway and Iceland, and also via deep sea transshipment (to feed the concentration of processing industries in the area); and meat and dairy products, built around an established ferry service connection with Denmark. (See **Table 4.1** for full details of RoRo berths and container cranes on Humber).

There are no container handling facilities suitable for deep sea services, although plans have been proposed in the past for riverside terminals in Hull and Killingholme.

Port	Terminal	Cargo types	Services	Overseas origins
Hull	Riverside Terminal No.1	Trailers (RoRo)	P&O Ferries	Rotterdam
	King George Dock	Trailers (RoRo)	P&O Ferries	Zeebrugge
	Hull Container Terminal	Containers	Samskip, MacAndrews	Rotterdam, Gdynia
	King George & Queen Elizabeth Dock	Dry bulk – agri-bulks, cereals, cocoa		
	King George Dock – AAK	Liquid bulk – edible oils		
	King George Dock – Tate & Lyle / Westway	Liquid bulk – molasses		
Goole	Boothferry Terminal	Containers	UCI	Duisburg
	Aldam Terminal	Containers	TransPal Line (now transferred to Hull)	Sweden
	Caldaire Terminal	Dry bulk – agri-bulks, cereals		
	South Dock – NW Trading	Dry bulk – cereals		
	Ouse Dock	Dry bulk – agri-bulks		
	Barge Dock – Kerfoot Group	Liquid bulk – vegetable oils		

Table 3.1: Relevant Ports and Terminals on Humber Estuary and River Trent Handling Food Commodities (continued)

Port	Terminal	Cargo types	Services	Overseas origins
Killingholme	Humber Sea Terminal	Trailers (RoRo)	Stena Line	Hook of Holland (Rotterdam)
	CdMR Killingholme	Trailers (RoRo)	CLdN RoRo, Cobelfret Ferries	Rotterdam, Zeebrugge
Immingham	ABP Exxtor Terminal	Containers	Samskip, North Sea Container Line, Feederlink, CMA-CGM, Tschudi Line, UCI, Unifeeder	Iceland, Norway, Rotterdam, Zeebrugge, Baltic, Moerdijk, Hamburg
	DFDS Seaways Riverside	Trailers (RoRo)	DFDS Seaways	Esbjerg, Vlaardingen, Norway, Gothenburg
	DFDS Seaways Dockside	Trailers (RoRo), containers	DFDS Seaways, Eimskip	Cuxhaven, Iceland
	Freshney Cargo Services Terminal	Containers, break bulk	Sea-Cargo	Norway
	In-dock common user	Dry bulk – grain, agri-bulk		
	In-dock and riverside facilities	Liquid bulk – handling and storage		
Grimsby	Royal Dock	Containers, break bulk (frozen fish)	Eimskip-CTG	Norway, Russia
New Holland	New Holland Bulk Terminal	Dry bulk – grain and feedstuff		
	New Holland Dock	Dry bulk and general cargoes		
Howdendyke	PD Ports	Dry bulk and general cargoes		
Barrow Haven	Old Ferry Wharf	Dry bulk and liquid bulk		
Trent	Flixborough Wharf	Dry bulk and general cargoes		
	Grove Wharf & Neap House Wharf	Dry bulk, liquid bulk and general cargoes		
	Gunness Wharf	Dry bulk and liquid bulk		
	Keadby Wharf	Dry bulk		

Source: Web sites, port handbooks and direct contact with port management

In addition to the RoRo and container mode for food imports into the Humber there are several bulk terminals and river wharves that receive food products.

The King George & Queen Elizabeth Dock in Hull has specialist facilities for handling liquid food bulks, such as edible oils and molasses and the AAK berth and quayside storage and processing (refining) plant is a significant import centre for palm oil, a key ingredient (once processed) for many different food products. Edible oils are also handled through the Kerfoot Group facility at Barge Dock in Goole and there are many other liquid bulk facilities in Hull and Immingham and wharves on the Trent, although not necessarily geared up and approved for handling food products.

Cereals and ‘agri-bulks’ (dry bulks) are handled through a range of Humber ports and Trent wharves and Hull also handles a concentration of bagged cocoa imports, although not requiring specialised handling equipment.

In addition to receiving frozen fish in containers the port of Grimsby also handles regular consignments of frozen fish carried in general cargo / reefer vessels and discharged on pallets by forklift truck, straight into cold storage.

In addition to a range of shipping modes and terminal operations there is also a range of vessel sizes calling into the Humber carrying food commodities. The largest ferries call at Immingham, Killingholme and Hull and Immingham also handles large consignments of grain imports.

Image 3.1: Key Ports on Humber Estuary



Grain shipped into the smaller Trent wharves is carried in smaller ‘coaster’ type vessels that could transfer to almost any other UK port with the crane and ‘grab’ attachments required to discharge the cargo. However, while the liquid bulk carriers that bring palm oil into Hull could berth quite easily at other ports, they will struggle to find a port with the required pipelines, storage tanks and refining facilities found at Hull (see **Annex 10**).

Port	Tankers	Dry bulk vessels	RoRo vessels	Container vessels	Other vessels
Hull	492	935	872	313	87
Goole	17	747	1	167	1
Grimsby & Immingham	2,224	2,095	3,139	465	175
River Trent & Ouse	18	923		2	
River Hull & Humber	118	442	1		4
TOTAL	2,869	5,142	4,013	947	267
UK TOTAL	21,192	30,416	69,623	8,356	12,837

Source: DfT *Maritime Statistics*

Note: Passenger vessels not included

The ports and terminals on the Humber and Trent handle 9% of all commercial ship arrivals into the UK (13,238 out of 142,424) and 17% of all dry bulk vessel calls (Immingham is UK’s premier dry bulk port). RoRo appears to be less significant in terms of vessel calls, but this comparison is biased by the high number of ferry arrivals on high frequency services in Dover and Ramsgate, and the fact that ferries calling into Immingham on daily services are some of the largest RoRo ferries calling at UK ports.

Ferries discharging and loading at ports in the Humber generally stay on berth for 8 to 12 hours in order to allow time for shore based stevedoring operations to tow generally unaccompanied units off and on the ships. In practice the ferries are in port during the day and sailing to their overseas destinations overnight. While RoRo berths in the Humber are used no more than once a day, there are two vessel calls per day, every day, on berths at Purfleet and up to an average of 7 calls per day, every day, on berths at Dover.

4. PORT DESCRIPTION

4.1 Port infrastructure

The Humber's strength lies in the range of dry bulk and liquid bulk handling facilities and the RoRo ferry and container handling terminals at Immingham, Killingholme, Hull, Goole and Grimsby.

Dry bulk and liquid bulk operations on the Humber tend to specialise in fuels (oil and coal) and minerals but there are grain handling facilities (see Section 2) and reception facilities for edible oils at other ports. Tank storage and elements of refining and processing are a feature at the edible oil facilities but grain handling generally involves discharge and inland transport, with some silo storage in Immingham. There are no milling operations ongoing at the ports.

For unit load traffic the Humber ports serve the unaccompanied trailer mode (RoRo) and intra-European and deep sea feeder container services.

There are significant ferry berthing and land-side terminal facilities at Immingham, Killingholme and Hull, with major riverside berth developments at each of these ports during the last twenty years, leading to improved vessel turnaround times and capacity for larger ferries. The large back-up terminal areas are a necessary feature of handling 'unaccompanied' operations, where trailers are parked before being shipped for export and before they are collected by road haulage operators after import.

In total there are 34 RoRo berths (in-dock and riverside – see **Table 4.1**) available in the Humber port complex, nearly a quarter of the UK mainland's RoRo berths. All of these berths are designed to handle conventional RoRo ferries that incorporate their own ramps that are lowered onto the berth structures to make the 'bridge' for loading and discharging their cargo of trailers and other mobile units.

Port	Terminal	Location	RoRo berths	LoLo cranes
Hull	P&O Ferries River berth	Riverside	1	
	P&O Ferries King George Dock	In-dock	3	
	Hull Container Terminal	In-dock		3
	Finland Terminal	In-dock	2	
	King George & Queen Elizabeth Dock	In-dock	5	
	Alexandra Dock	In-dock	1	
Goole	Boothferry Container Terminal	In-dock		2
	Aldam Terminal	In-dock		2 (mobiles)
	Railway Dock	In-dock	1	1
	Ship Dock / Ocean Lock	In-dock	1	
Killingholme	Humber Sea Terminal (CdMR Killingholme)	Riverside	6	
Immingham	ABP Exxtor Terminal	In-dock	3	2
	Freshney Cargo Services	In-dock	1	
	Nordic Terminal – Dockside	In-dock	3	
	Nordic Terminal - Riverside	Riverside	3	
Grimsby	Freshney Cargo Services	In-dock	1	
	Royal Dock	In-dock	1	
	Alexandra Dock	In-dock	2	
TOTAL			34	10

Source: PRB Associates *UK Short Sea Freight RoRo and LoLo Capacity Analysis and Report*

Seven fixed container gantry cranes in Hull (3), Goole (2) and Immingham (2), with back-up equipment for efficient movement and storage of containers on the adjacent terminal areas, provide the capacity for numerous container services. However, the Humber ports do not handle any deep

sea container services due to their distance from the main trade lanes and the lack of deep water berths (all existing container berths are in dock).

In total the Humber ports operate nearly 10% of the UK mainland's total number of container cranes, although the size, 'outreach' and scale of the cranes in operation are not near to the size, 'outreach' and scale of the container cranes at the country's main deep sea ports; Felixstowe, Southampton, Thamesport, Tilbury and Liverpool. Some indication of the utilisation of RoRo berths and container cranes in the Humber and their ability to handle additional vessel calls is provided in Section 5.3.

4.2 Services calling at the port(s)

There are a total of 30 RoRo ferry and container services operating from Hull, Goole, Killingholme, Immingham and Grimsby, 15 ferry services and 15 container services, run by a range of operators, such as DFDS Seaways, Cobelfret Ferries, P&O Ferries and Stena Line on the RoRo side and Samskip and United Container Intermodal on the LoLo side.

These services provide 98 sailings to overseas destinations every week, concentrating on connections with the major ports in Netherlands and Belgium (Near Continent), but also serving Scandinavia, the Baltic, Iceland and Spain.

Port	Service	Destination	Service type	Sailings per week
Hull	P&O Ferries	Rotterdam	Ropax	7
	P&O Ferries	Zeebrugge	Pax	7
	Finnlines	Finland	RoRo	2
	UPM Seaways	Baltic	RoRo	1
	Samskip	Rotterdam	LoLo	4
	MacAndrews	Gdynia	LoLo	2
Goole	United Container Intermodal (UCI)	Duisburg	LoLo	4
	TransPal Line	Vasteras	Lo-con	2
Killingholme	Stena Line	Hook of Holland	Ropax	7
	CLdN roro	Rotterdam	RoRo	6
	Cobelfret Ferries	Zeebrugge	RoRo	6
Immingham	DFDS Logistics	Moss/Halden	LoLo	2
	DFDS Logistics	Bilbao	LoLo	1
	Samskip	Reykjavik	LoLo	2
	Feederlink	Rotterdam	LoLo	2
	CMA CGM	Rotterdam / Zeebrugge	LoLo	1
	Tschudi Lines	Esbjerg	LoLo	1
	Tschudi Lines	Baltic	LoLo	1
	DFDS Seaways	Cuxhaven	RoRo	5
	DFDS Seaways	Esbjerg	RoRo	6
	DFDS Seaways	Vlaardingen	RoRo	6
	DFDS Seaways	Brevik	RoRo	2
	DFDS Seaways	Rotterdam	RoRo	6
	DFDS Seaways	Gothenburg	RoRo	6
	Eimskip	Reykjavik	LoLo	1
	Sea-Cargo	Norway (west coast)	RoRo	2
	Finnlines	Finland	RoRo	1
	UCI	Moerdijk	LoLo	2
	Unifeeder	Rotterdam/Hamburg	LoLo	2
Grimsby	Eimskip-CTG	Murmansk	Lo-con	1
TOTAL				98

Source: PRB Associates, *UK Short Sea Freight RoRo and LoLo Capacity Analysis and Report 2010*

45% of all freight RoRo and LoLo capacity connects with Rotterdam, with Zeebrugge (14%) and Sweden (13% - mostly Gothenburg) also being well served. 30% of all UK short sea ferry and

container service capacity connecting with the Near Continent of Europe sails from ports in the Humber and the Humber ports also serve 77% of UK / Scandinavian capacity and 42% of UK / Baltic capacity. From a food import perspective it is the Humber's large share of UK / Continental capacity that is most important, in terms of its potential loss and transfer, or any spare capacity in the system that might absorb traffic and vessels diverted from disrupted ports elsewhere.

In terms of hinterland served, for bulk and unit load traffic, the Humber ports serve the East Midlands, the M62 corridor, northern England and Scotland with an element of Irish traffic using the M62 as a 'landbridge' between Ireland and the Continent, through the Humber ports. Dover and the Channel Tunnel still draw substantial amounts of RoRo traffic from the Humber ports' hinterland, attracted by the high frequency of sailings during the day compared to the pattern of at most one sailing per day (late afternoon / evening) provided by each service operating from the Humber ports.

Conversely, the Humber ports are attracting an increasing amount of container traffic, both intra-European and deep sea feeder, with lines aiming to reduce the distance between the UK port and the ultimate cargo origin and destination, as well as aiming to avoid the sometimes congested UK deep sea ports (Felixstowe, Southampton, etc.)

Continental destination	Capacity employed on route (trailer / 40' container equivalent units)	% share
Rotterdam	886,305	45%
Zeebrugge	277,126	14%
Sweden	256,017	13%
Denmark	142,879	7%
Cuxhaven	115,740	6%
Baltic	97,482	5%
Norway	66,099	3%
Iceland	52,528	3%
Moerdijk	21,684	1%
Hamburg	5,483	0%
Spain	1,387	0%
TOTAL	1,962,250	100%

Source: PRB Associates, *UK Short Sea Freight RoRo and LoLo Capacity Analysis and Report 2010*

4.3 Port hinterland

The road and rail connections with the Humber ports' hinterland, along with the potential use of the inland waterways system and coastal shipping movements are an important feature in assessing potential port disruption, in terms of an interruption of supply to the ports and congestion at the ports if import goods cannot be transported from the ports.

More freight is handled by rail to and from the port of Immingham than any other UK port but the commodities handled (oil, coal, mineral ores) have no connections with food supply. There have been initiatives to run regular trains for container movements but the range of UK origins and destinations and the relatively short distances between the ports and the hinterland undermines the economics. Road haulage (for bulk products, trailers and containers) is therefore a key industry sector serving the Humber ports (and all other ports and port groups) and fuel supplies and prices, driver shortages and the simple survival of road haulage companies, in a low margin industry, are all vital for the ports.

The 'lifeline' arteries for the Humber ports are therefore the M62, right into Hull and the M18 / M180 that links the south bank ports (Killingholme, Immingham and Grimsby) with the rest of the country via the M62 (east / west) and the A1 and M1 (north / south). If there is any disruption on these 'lifeline' sections of road, east of Goole, there will be 'knock-on' disruption at the ports. The road connection south of the river is rarely congested, but there is the potential for port traffic disruption north of the river where the M62 runs through the city centre of Hull to connect with the port complex, located to the east of the city.

Palm oil arriving at the port of Hull and fish imported into Immingham, Grimsby, and Hull is generally processed within a few miles of the ports and therefore road disruption has the potential to disrupt the supply of processed product ready for the consumer. Just as port disruption at Hull or Immingham has the potential to severely disrupt the palm oil and seafood industries north and south of the Humber.

5. PORT TRADE AND TRAFFIC

5.1 Overall trade and traffic mix

Foreign import traffic through the Humber Ports in 2010 was just over 50 million tonnes, comprising dry bulks, liquid bulks, general cargo and unit load traffic. Export volume, in comparison, was just over 15 million tonnes.

The Humber Ports handle 19.4% of all UK foreign and domestic import tonnage coming through the country's 'Major' ports and 19.0% of all UK ports import traffic. Dry and liquid bulk fuels (coal and oil) and chemicals are significant contributors to the ports import tonnages but unit load traffic is also a major feature at Immingham, Killingholme, Hull and Goole. Further analysis within this section highlights some of the food commodities among the bulk, general and unit load import traffic.

Port	Dry bulk	Liquid bulk	General	Unit load ¹	Total
Grimsby & Immingham	15,244	10,860	741	9,374	36,219
Hull	1,452	835	884	3,174	6,345
Goole	332	32	760	318	1,442
River Hull & Humber	509	5,164	177		5,850
River Trent & Ouse	512	33	515		1,060
Total	18,049	16,924	3,077	12,866	50,916
UK Major Ports Total ²	72,382	129,878	12,634	89,524	304,418

Source: Department for Transport, Maritime Statistics 2010

Note 1: Unit load import includes trade cars, 858 thousand tonnes through Immingham and Killingholme. Total export volume 15,377 thousand tonnes

Note 2: Foreign and domestic total for Major Ports, not including Channel Tunnel

The Humber is a key northern access point for freight ferries coming from the Continent of Europe and Scandinavia and for short sea container services providing direct links for Continental traffic and for deep sea transshipment traffic via feeder services. Immingham in particular handles several deep sea feeder services that link with the key container hub ports on the Continent (Rotterdam, Antwerp, Hamburg), allowing importers to land containers into the UK at a more northerly point, closer to the ultimate destination of the cargo, rather than discharging in Felixstowe or Southampton. Recognised feeder services: Feederlink, CMA CGM, and Unifeeder all call regularly at Immingham port.

Port	Containers	Trailers RoRo	Trade cars	Total
Grimsby & Immingham	32	389	595	1,016
Hull	54	127		181
Goole	19			19
River Hull & Humber				
River Trent & Ouse				
Total	105	516	595	1,216
UK Major Ports Total*	2,304	2,763	1,995	7,062

Source: Department for Transport, Maritime Statistics 2010

* Includes trailers through Channel Tunnel

Nearly 19% of all trailers bringing foreign imports into the UK come through ports in the Humber with the majority being unaccompanied trailers that require stevedoring teams at either end of the ferry journey handling the load and discharge operations. The equivalent number of trailers entering the UK through Dover and the Channel Tunnel (1.562 million units, 57% of UK total), three times the Humber volumes, are mostly accompanied trailers that require no stevedoring assistance and much less terminal area for loading and discharge operations.

While the number of containers being imported through the Humber ports has grown it is still only 5% of the UK total and insignificant compared to the numbers entering the country through Felixstowe

(1.039 million) and Southampton (444,000). Container vessels arriving in Immingham and Hull are typically of a 500 TEU capacity designed for short sea and deep sea feeder operations.

5.2 EU and non-EU food imports

The Humber ports are significant in terms of the import of fish from non-EU sources (Iceland, Norway and China), palm oil (AAK terminal in Hull), sugar (Hull and Immingham) and grain. Food imports, amounting to nearly 1.4 million tonnes from non-EU sources, comprise 5% of all non-EU import volumes through the Humber ports and represent 10% of all UK food imports from non-EU sources.

The significance of the Humber for the import of food commodities from EU sources requires a deeper insight into the bulk and general cargo trades using the various ports and terminals in the Humber but the high number of short sea RoRo and container service connections indicates that there is a good proportion of food import among the estimated 24 million tonnes of import from EU sources.

Commodity	Non-EU	EU est.	Total
#Frozen and chilled meat (#0201, 0202, 0203, 0204, 0206, 0207)	1.211	2,363.000 (Estimated food via RoRo and short sea LoLo through Immingham, Killingholme, Hull & Goole, plus bulk food imports but not containers on RoRo)	
Fresh and frozen fish (#0302, 0303, 0304)	164.005		
Citrus fruit, fresh or dried (#0805)	0.060		
Palm oil (#1511, 1513)	223.645		
Sugar (#1701, 1702, 1703)	57.594		
Other commodities	903.368		
Total food import	1,349.884		
<i>Total foreign import, EU estimated</i>	<i>26,766.581</i>	<i>24,148.419</i>	<i>50,915.000</i>

Source: DEFRA bespoke analysis of data feed from HMRC for non EU traffic and DfT Maritime Statistics coupled with Border Agency analysis for EU imports and estimated food element

A best estimate for food imports arriving in ferries and container vessels from EU countries is over 1 million tonnes and data on dry bulk agricultural products imported through the Humber indicates over a million tonnes of bulk food import from EU sources. The Humber ports are therefore equally significant (roughly 11% of UK total) for food imports from the EU and from non EU countries.

The Humber ports are a focus for the import of **fresh and frozen fish** (65% of UK total from non EU sources), to feed into the food processing plants that are established in Grimsby and Hull. Imports from non-EU countries can be quantified from HMRC data, although it is difficult to establish how much of the 115,000 tonnes coming from EU countries enters the UK through the Humber ports. In any case it is likely to be arriving in trailers and containers and therefore accounted for in the **Table 5.3** figure of 2.363 million tonnes of EU food import.

Port of Clearance	Non-EU	EU	Total
Dover / Channel Tunnel	2.008	114,546 (Mostly through Humber ports in trailers and containers)	
Felixstowe / Southampton	37.120		
Thames / Medway	5.841		
Humber ports	164.005		
Other UK ports and airports	45.016		
Total	253.990		
<i>Check:</i>	<i>253.990</i>	<i>114.546</i>	<i>368.535</i>

Source: DEFRA bespoke analysis of data feed from HMRC for non EU traffic and DfT *Maritime Statistics*

The Humber ports are also a focus for **palm oil imports** arriving into the UK from non-EU sources, with the Thames and Medway also receiving significant tonnages, through purpose built liquid bulk handling, storage and processing plants located adjacent to the berths at the ports. Nearly 60% of all UK palm oil imports from non-EU countries enter the UK through the Humber ports (Hull). This specialisation and the East Coast aspect of the Humber, facing the European continent would indicate that a good proportion of palm oil imports from EU countries also enter the country through the Humber ports, although not necessarily in bulk mode.

Port of Clearance	Non-EU	EU	Total
Dover / Channel Tunnel	0.000	85.956 (Mostly RoRo traffic)	
Felixstowe / Southampton	0.858		
Thames / Medway	99.557		
Humber ports	223.645		
Other UK ports and airports	70.595		
Total	394.655		
<i>Check:</i>	<i>394.655</i>	<i>85.956</i>	<i>480.611</i>

Source: Defra bespoke analysis of data feed from HMRC for non EU traffic and DfT *Maritime Statistics*

Total food import through the Humber ports is in the region of 3.7 million tonnes, 11% of the UK's total food and drink import volume. The question for this report is the resilience of this food supply in the face of potential port disruption.

Port	2008		2009		2010	
	EU	Non-EU	EU	Non-EU	EU	Non-EU
Immingham (inc. Killingholme)		807		757	1,197	792
Grimsby		31		39		41
Hull		572		580	566	514
Goole		3		7	40	3
River Hull & Humber					280	
River Trent & Ouse		6		0	280	0
Total		1,419		1,383	2,363	1,350

Source: DEFRA bespoke analysis of data feed from HMRC / DfT

6. PORT FLEXIBILITY

6.1 Issues and concerns / potential disruption scenarios

The port and terminal operators consulted in the Humber (Associated British Ports Grimsby & Immingham, Associated British Ports Hull & Goole, Port of Grimsby east and AAK Hull) had no specific concerns regarding port disruption, although the lock gates at Immingham, Grimsby and Hull are identifiable 'hot spots' in terms of the impact on ship movements if they are put out of action (although multiple gates and spare gates available are options). Recognising such insecurity and providing increased capacity are the key drivers behind riverside RoRo and bulk handling development at Immingham and Hull and plans for a new riverside development at Grimsby.

Just as in the Thames and Medway estuaries the range of ports and terminals in the Humber, with a degree of under-utilised capacity, provides local alternatives should any disruption occur at one of the main RoRo or container terminals. Substitute container handling capacity is available at Hull should operations in Immingham be disrupted and vice versa. The same is true for RoRo ferry operations although the size of vessel now being handled on the river berths is becoming too large for handling in-dock. That still leaves scope for interchange between river berths at Killingholme, Hull and Immingham.

Consultations in Grimsby and Immingham, particularly concerning fish imports, exposed the fact that the move from trawler-based landings and bulk imports into Grimsby to seafood imports in containers and trailers through Immingham had not been mirrored by moving the Border Inspection Post. Container loads of fish are therefore being transported to Grimsby for Port Health inspection before being transported back to Immingham for port clearance, only to be transported back to Grimsby's fish market or fish processing factories.

Associated British Ports in the Humber and its pilotage and tug services, supported by electronic vessel tracking services (VTS) is responsible for the safe navigation of vessels in the river and the wider estuary. The Humber handles far larger vessels than the ferries, container vessels, or dry bulk and liquid bulk vessels carrying food commodities. These include the Very Large Crude Carriers (VLCCs) and Ultra Large Crude Carriers (ULCCs) bringing crude oil to the river jetties supplying two oil refineries on the south bank of the river. Qualified pilots, powerful tugs and the supporting navigational aids and systems provide the safe navigation required to avert problems caused by collisions and groundings.

Just as the Port of London Authority is responsible for safe navigation on the River Thames and Medway, so Associated British Ports has the same responsibility in the River Humber and this responsibility leads to the authorities having a key role in contingency planning and maintaining operations in the event of disruption. Commercial operators working in the ports, handling vessels and cargoes, rely upon the recognised authority to control access and safe navigation on the river and concentrate on the infrastructure and resources under their direct control to avoid disruption, paying less regard to the consequences of more general port disruption.

On riverside facilities the threat of damage caused by vessels in collision with infrastructure is always there, as is the possibility of lock gate damage at Immingham, Hull and Goole, preventing access to the enclosed docks. Such incidents are very rare but the port authority has contingency plans (Business Continuity Plans) in place to deal with such incidents, starting with plans to remove any blockages and get facilities operational again as quickly as possible while vessels awaiting a berth may be found alternative lay-by berths or may simply anchor at specified safe anchorage locations in the river.

The range of facilities and operations in the Humber means there are specific disruption scenarios for RoRo ferry, container and bulk handling operations, as well as 'global' scenarios, such as a tidal surge affecting all terminals and berths.

The next two sections of this report examine the impact of disruption at RoRo and container handling facilities, from the perspective of freight traffic diversion and vessel diversion. The specific impact of disruption at the AAK facility, for liquid bulk (palm oil) imports, is dealt with in **Annex 10** although the scenario is very similar.

6.2 Traffic diversion

If there is disruption throughout the Humber ports complex and vessels on existing ferry and container services can't operate on routes into the Humber shippers, such as trailer operators on the ferries and container service providers, will first have the option to find alternative routes and services into the UK, if there is sufficient capacity available.

Table 6.1: Indicative spread of short sea container traffic if Humber terminals closed					
Port	Available ferry capacity Jan 2011	Actual unit volume 2010*	Approx. capacity utilisation	Total spare capacity	Closure of Humber and traffic spread
Tyne	40,748	22,000	54%	18,748	18,748
Teesport	194,316	128,000	66%	66,316	66,316
Hull	280,555	208,000	74%	72,555	-208,000
Killingholme	539,736	377,815	70%	161,921	-377,815
Immingham	413,995	289,797	70%	124,199	-289,797
Felixstowe	308,775	180,000	58%	128,775	128,775
Ipswich	45,448	33,000	73%	12,448	12,448
Harwich	741,242	243,000	33%	498,242	498,242
Tilbury	194,466	136,126	70%	58,340	58,340
Purfleet	509,704	356,793	70%	152,911	92,743
Dagenham	104,172	72,920	70%	31,252	
Ramsgate	235,698	160,000	68%	75,698	
Dover	3,320,480	2,068,000	62%	1,252,480	
Channel Tunnel	1,493,881	1,089,051	73%	404,830	
Newhaven	69,432	38,000	55%	31,432	
Portsmouth	242,794	240,000	99%	2,794	
Poole	99,840	37,000	37%	62,840	
Plymouth	57,356	9,000	16%	48,356	
Total	8,892,638	5,688,502	64%	3,204,136	

Source: Ferry capacity estimates come from PRB Associates *UK Short Sea Freight RoRo and LoLo Capacity Analysis and Report*. Continental unit volumes come either direct from the DfT's *Maritime Statistics*, or else the numbers are based on estimated utilisation factors

Note: *More accurate unit volumes (UK/Continent), by port and EU origin, could be obtained through a specific enquiry and analysis of DfT *Maritime Statistics*

Ferry terminal closure at Hull, Killingholme and Immingham would leave the annual equivalent of an estimated 900,000 freight units searching for alternative routes from the Continent and the available capacity on existing services is in short supply (Estimated spare capacity serving Harwich is based upon recorded traffic in 2010 from DfT and a capacity evaluation at the beginning of 2011, just after appreciable additional vessel capacity had been introduced by Stena Line Freight), unless schedule intensity is increased, additional vessels are employed (maybe diverted from Humber routes if berth capacity available), or freight is prioritised on passenger ferries. All estimated spare capacity on east coast ferry services between the Tyne and the Thames would be absorbed if the Humber ports could not deal with existing services (see **Table 6.1**).

Furthermore the closure of Immingham port for RoRo operations would also lead to freight from Scandinavia having to divert to alternative routes, although it would be impossible to transfer the scale of traffic on the dominant daily ferry service between Gothenburg and Immingham onto other routes between Scandinavia and the UK.

The importance of the Humber ports for short sea container service capacity provision is also evident from **Table 6.2**. Nearly 25% of North Sea container service capacity linking the UK and the Continent is serving the Humber ports. If average service utilisation is estimated to be 70% the closure of the Humber ports would lead to approximately 150,000 container units (FEU) requiring alternative container service routes into the country.

Finding spare service capacity on existing alternative services for the 150,000 displaced units would prove to be very difficult. Regardless of the difficulties encountered in placing additional inland transport resource (road transport) at other ports and without taking into account the possible intensification of service levels on these other routes, to increase capacity, the Humber closure would lead to all spare short sea container capacity being occupied on services operating into the UK from the Channel Tunnel in the south to Grangemouth in the north, with Tilbury and Teesport being the key 'outlets'.

Port	Available container capacity Jan 2011	Actual unit volume 2010*	Approx. capacity utilisation	Total spare capacity	Closure of Humber and traffic spread
Grangemouth	176,336	123,435	70%	52,901	6,724
Blyth	21,684	15,179	70%	6,505	6,505
Tyne	36,949	25,864	70%	11,085	11,085
Teesport	151,760	106,232	70%	45,528	45,528
Hull	142,948	100,064	70%	42,884	-100,064
Killingholme		0	70%	0	0
Immingham	72,284	50,599	70%	21,685	-50,599
Felixstowe	24,845	17,392	70%	7,454	7,454
Ipswich		0	70%	0	0
Harwich		0	70%	0	0
Tilbury	200,044	140,031	70%	60,013	60,013
Purfleet		0	70%	0	0
Dagenham		0	70%	0	0
Ramsgate		0	70%	0	0
Dover		0	70%	0	0
Channel Tunnel	44,512	31,158	70%	13,354	13,354
Newhaven		0	70%	0	0
Portsmouth		0	70%	0	0
Total	871,362	609,953	70%	261,409	0

Source: Ferry capacity estimates come from PRB Associates *UK Short Sea Freight RoRo and LoLo Capacity Analysis and Report 2010*. Continental unit volumes are based on estimated utilisation factors

Note: *More accurate unit volumes (UK/Continent), by port and EU origin, could be obtained through a specific enquiry and analysis of DfT *Maritime Statistics*.

For fish coming in containers from Iceland and Norway there are no alternative services, calling at other UK ports and therefore the only option would be for the container vessels employed to find an alternative UK port, or feed the containers back to the UK from the Continent on other container services. The size of container vessel employed by the Icelandic operators has increased over the years and therefore the alternative port options have reduced. However, there are alternatives, such as Teesport (although there would be concerns about necessary Border Inspection), and the bigger issue is going to be repatriating the containers back to Grimsby to 'feed' the processing plants.

The container vessels used on the Icelandic and Norway services have in-built resilience in the form of installed cranes on the ships ('ships gear') enabling the load and discharge of containers at any

port with a suitable berth, without the need for specialised container gantry cranes, or heavy lift mobile cranes at the port. This would mean that it would be easier to locate to an alternative UK port and supply from Iceland and Norway is more secure, providing the fish can be landed, processed and containerised at alternative ports if, say, Reykjavik was closed.

Transfer of freight to alternative services is only possible if such regular alternative liner services are in operation. In the RoRo and container sectors the services are built around scheduled services and therefore alternatives can be easily identified and in general capacity on these regular liner services can be increased by intensifying the sailings schedules and employing additional vessels, if vessels and berth capacity are available.

For bulk cargoes the shipping movement depends on cargo availability rather than scheduled liner services. Vessels of the required size and configuration are hired on a 'spot' basis (for one-off loads), or on a term charter basis for continuous use to carry available cargoes, as and when it becomes available in sufficient quantity. The shipment of palm oil from a range of overseas origins will be organised when the importer needs the material at a suitable price and quantity from a selected supply source. For bulk movements, therefore, port disruption does not mean simply finding another service to move the cargo, it means re-arranging the transport on a suitable available vessel to an alternative port, with the required cargo handling and storage facilities.

It is this latter element for bulk commodity movements that complicates the transfer possibilities. In the Humber example the palm oil would need to be shipped to an alternative port with the required storage and refining capabilities (see **Annex 10**). For grain imports into Immingham, chosen because it can handle large consignments in large vessels that can access the port, alternative options (for the same vessels) will be limited by berth size and capacity. The options then entail transporting the grain in smaller consignments in smaller vessels to other ports that may or may not have the required storage capacity. The whole question of the resilience of grain imports to port disruption would require a separate study.

The realistic solution in many cases will be a combination of freight diversion and vessel diversion.

6.3 Vessel diversion

If RoRo ferries, or container vessels are going to be able to transfer to another port there first has to be the required vessel and cargo handling capacity available at any alternative port.

The palm oil example is examined in **Annex 10** but the general principles concerning feasible diversion of bulk food commodities will apply to other liquid and dry bulk products.

For RoRo ferry diversion the minimum requirement is the access to an alternative RoRo berth, meaning that the depth of water has to be sufficient and the length, beam (width) and cargo access design (bow/stern doors and ramps) and size of the ship has to match the configuration of the RoRo berth. The alternative berths also need to be free and available from their usual use, unless cargo operations can be compressed to free up more berth time.

Within the Humber there is scope for some interchange between berths and scope to use otherwise unused berths (See **Table 6.3**). Given the number of RoRo berths in Hull, Killingholme and Immingham there is a relatively low average utilisation per berth (1 call per week per berth in Hull). However some berths are currently used extensively and others not at all, so a full review would be required in order to assess the scope for transfer for current RoRo vessels using the Humber.

Similarly, the relative use of RoRo berths at other ports would need to be examined to determine the potential for further use. The berths at Purfleet and Dagenham are used far more intensively than those at Killingholme and Immingham, for instance, although the size of vessels using the berths and the type of RoRo operation (unaccompanied trailer) is very similar. It is only the relative length of the sea crossing and the feasible scheduling that leads to more intensive berth use at Purfleet, suggesting that the time required for cargo handling operations is not a constraint.

There is berth availability at other ports but, again, the realistic options would have to be considered on a case by case basis. Schedules may have to be adjusted for the current users and in some cases there are more significant restrictions on vessel size that will prevent transfer, e.g. Ipswich.

Table 6.3: UK East Coast and South Coast RoRo berth alternatives				
Port	RoRo Berths	Berth restrictions (L / D) metres	Ferry calls per week	Average calls per berth per week
Tyne	5	185 / 7.5	7	1
Teesport	4	200 / 8.0	9	2
Hull	12	196 / 10.4	17	1
Killingholme	6	247 / 9.3	19	3
Immingham	11	198 / 10.4	34	3
Felixstowe	2	250 / 9.8	16	8
Ipswich	2	150 / 7.0	5	3
Harwich	6	300 / 9.5	32	5
Tilbury	7	250 / 10.5	15	2
Purfleet	2	200 / 7.5	26	13
Dagenham	1	241 / 8.0	13	13
Dartford	2	236 / 10.1	-	-
Sheerness	7	230 / 9.0	1	-
Ramsgate	3	160 / 6.5	39	13
Dover	8	200 / 7.8	365	46
Newhaven	2	145 / 6.0	14	7
Portsmouth	5	200 / 7.0	39	8
Southampton	5		-	-
Poole	2	7.0	8	4
Plymouth	1	200 / 8.5	12	12

Source: PRB Associates *UK Short Sea Freight RoRo and LoLo Capacity Analysis and Report 2010*

For **unaccompanied trailer services**, such as is mainly the case at Humber ports, there also needs to be sufficient land-side storage capacity, stevedoring resource (labour and equipment) and inland road haulage capacity to handle additional vessel calls.

For **container vessel operations** the requirement is for suitable lifting equipment to handle containers off and on vessels. If fixed container gantry cranes are not available there may be mobile cranes with the required container handling fittings ('spreaders') and there may be container cranes fitted to the vessels themselves.

There are three container crane operations ongoing in each of Hull, Goole and Immingham, a total of nine container cranes. While the average utilisation at Hull and Goole is two calls per week per crane, it is five calls per week per crane in Immingham. Even at Immingham, however, there is scope for increased use, providing the land-side storage and receipt and despatch facilities have sufficient capacity.

Container cranes at Felixstowe and Thamesport are used primarily for deep sea operations but they also load to feeder services and there are cranes in Harwich and Ipswich that currently have no regular customers.

In order to fully assess real available capacity and the feasible transfer of short sea container services a full analysis and modelling of current operations and existing services and vessels is required, taking account of land-side container handling capacity, labour and equipment resources and inland transport capacity as well as the basic number of cranes and berth capacity.

Table 6.4: UK East Coast and South Coast Container Berth alternatives				
Port	LoLo Cranes	Berth restrictions (L/D) metres	Estimated short sea and feeder calls per week	Average calls per crane per week
Grangemouth	3	160 / 7.7	11	3.67
Blyth	1	154 / 6.7	2	2.00
Tyne	1	300 / 11.1	4	4.00
Teesport	4	294 / 9.9	14	3.50
Hull	3	199 / 10.4	6	2.00
Goole	3	100 / 6.0	6	2.00
Immingham	3	198 / 10.4	15	5.00
Boston	1	120 / 5.5	-	
Felixstowe	27	400 / 15.0	8	N/A
Ipswich	4	150 / 7.0	0	0.00
Harwich	2	180 / 9.5	0	0.00
Tilbury	13	250 / 12.8	10	N/A
Sheerness	2	230 / 9.0	1	0.50
Thamesport	8	350 / 13.5	N/A	N/A
Portsmouth	4	200 / 7.0	N/A	N/A
Southampton	13	420 / 15.0	2	N/A

Source: PRB Associates *UK Short Sea Freight RoRo and LoLo Capacity Analysis and Report 2010*

Note: The dual handling of both deep sea and short sea services at Felixstowe, Tilbury, Thamesport and Southampton make it impossible to assess short sea vessel calls per crane

7. FOOD SUPPLY RESILIENCE ASSESSMENT

This Humber Case Study assesses the disruption scenarios, the resilience and the flexibility among ports and shipping services to handle the transfer of traffic flows. The implications for specific food commodity flows and supply chains in the event of port disruption are illustrated in the four food commodity Case Studies:

- Frozen meat and fish (**Annex 7**)
- Citrus fruit (**Annex 8**)
- Sugar (**Annex 9**)
- Palm oil (**Annex 10**)

As far as the Humber is concerned, the importance of Immingham and Grimsby for fish imports is examined in **Annex 7**.

In **Annexes 9** and **10** the importance of key import facilities in the UK for the handling of raw cane sugar (principally Silvertown, Thames) and palm oil (Hull, Humber) are assessed.

Alternative port options are considered where suitable berth, discharge, storage and processing / refining capacity are available. In these instances there is also the option to import more processed material from Continental suppliers, although this places additional burdens upon the Short Sea ferry and container service linkages.

8 MESSAGES & FINDINGS

Key messages and conclusions and suggestions for further work arising from the Case Study, concentrating on the ports and wharves in the Humber and Trent are summarised in bullet point format below:

- **Total food import** through the Humber ports is in the region of 3.7 million tonnes, 11% of the UK's total food and drink import volume
- There is a **degree of flexibility** between Humber ports and berths for handling RoRo and container services if a single port or berth is put out of action
- The Humber ports are a **primary unit load gateway** for UK imports. Short sea and feeder container services and RoRo ferry services (unaccompanied) are prominent features at Hull, Goole, Killingholme, and Immingham, although no single service is any more frequent than daily
- RoRo services are generally for **unaccompanied freight** due to the length of the sea crossing (inefficient use of driver and tractor unit on long ferry journeys) and the conventional ferries employed are generally able to access other ports, providing their size is not a restriction
- **Fish imports** through the port of Immingham, in container, from Iceland, Norway, Russia, and from deep sea origins such as China via container feeder services, are the UK's key supply route. Much of the UK's fish landings are also transported to Grimsby for processing. Contingency planning for the closure of Immingham, purely for its impact on fish supplies would prove a very useful exercise, to test feasible alternative ports in terms of available capacity and support service
- **70% of UK's imported fish** comes through Immingham and Grimsby from Iceland and Norway, but also from deep sea markets, transhipped in Rotterdam.
- Container services bringing fish into Immingham and Grimsby for the fish market and processing facilities would struggle to provide the same service via alternative ports and such alternatives would not necessarily have **Border Inspection** facilities
- **Crude palm oil** is imported in large quantities through Hull and there are similar facilities in London and Liverpool. The alternative to receiving and refining raw product in the UK, as with many other products, is to buy and receive refined product from Continental suppliers. This reduces the UK's resilience and places an increasing burden upon the UK's short sea RoRo and container service connections to move refined product to the UK
- **Goole**, 'the UK's inland port', located at a major motorway junction for north/south and east/west connections is becoming isolated due the access restrictions and the increasing size of vessels in service
- **Lock gates** at Grimsby, Immingham, Goole and Hull are perceived to be vulnerable but generally very reliable. The supply of palm oil to the AAK processing facility in Hull depends on access into the dock via lock gates to get to the purpose-built discharge, storage and processing plant on the dockside
- There is currently some **spare landside capacity** at the key Humber ports that could accommodate expansion
- Rotterdam, and to a lesser extent Zeebrugge, are key **Continental partner ports** for the Humber's RoRo ferry and container service links. Disruption at these ports would seriously impact upon supply through the Humber ports
- The **road haulage sector**, and its well-being, is crucial for the efficient operation of the Humber ports and the movement of goods to and from the ports. Company survival, fuel availability and price, driver shortages, and a range of other factors are important supply chain ingredients

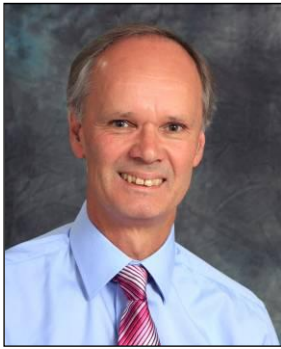
- The **M62 link to the port of Hull** runs through the southern part of the city centre and this is a serious potential bottleneck for port traffic
- The increasing amount of food import in containers and trailers and the declining importance of the port of Grimsby for non EU food imports means that for logistical and cost reasons it would be practical to transfer the **location of the Border Inspection Post** from Grimsby to Immingham
- Unless such a group is already in place, the Humber region needs a **Resilience Group**, run along the same lines as the Kent Resilience Group, bringing the private sector and public sector together to raise issues and plan contingencies among commercial operators linked to general disruption scenarios at the ports (general Business Continuity Planning)
- Further general discussion with the DfT on a possible **supplementary analysis of UK port traffic**, broken down into EU and non-EU traffic would help to bridge the gap created by the lack of detailed EU trade analysis, by individual UK port

It would be useful if the DfT's *Maritime Statistics* had a category for food grade liquid bulk in the same way that 'Agricultural products' define food grade dry bulk cargoes. A similar breakdown of EU / non-EU container and RoRo traffic figures from the DfT would aid in identifying under utilised ferry and container service capacity (on a confidential basis)

It would be useful to have an update of the DfT's assessment of dry bulk 'Agricultural produce' imports, broken down by country of dispatch (EU or non-EU) and UK port of discharge, in order to highlight EU bulk food imports, by UK port

- A separate and detailed Case Study may be required to assess the resilience of **grain import supply** in the face of port disruption,
- **More detailed analysis and modelling** of RoRo and LoLo berth use and availability and feasible freight and vessel transfer is required
- **Full update of UK short sea RoRo and container capacity** is required to compare with more recent traffic figures from the DfT (when 2011 figures available) in order to assess route capacity utilisation and spare capacity in the system.

ABOUT THE AUTHORS



Peter Baker, the founder and owner of PRB Associates, specialises in operational, financial and market analysis in the ports and shipping sectors; with working experience in the ports sector and in RoRo ferry operations.

In addition to a range of project commissions in the UK and internationally, Peter has researched and produced the '*UK Short Sea Freight RoRo and LoLo Capacity Analysis and Report*' every year since 2000 and for the first time in 2009 produced an Irish equivalent. The report and database information provide a detailed analysis and assessment of the capacity provision and spread in the market, with comprehensive route, service, vessel and port information contained in detailed appendices.

PRB Associates Limited specialises in providing shipping and transport consultancy and analysis services for private and public sector organisations. Founded in 1998, PRB Associates has successfully completed commissions for freight generators, freight transport service providers (shipping lines and road transport operators), port operators and various public sector organisations. Assignments have ranged from service analyses, feasibility studies, financial modelling and economic impact studies, to market research and appraisal and national transport strategy formulation.



Andrew Morgan, the founder of Global 78, has extensive international business and logistics experience gained in projects across many industrial sectors, including food supply projects in Europe, Brazil and India. These advisory and implementation projects have ranged in scope from agri-business, through manufacturing and processing, to wholesale and retail distribution in final consumer markets.

A Chartered Member of the Chartered Institute of Logistics and Transport (UK), Andrew is the author of '*Making the Brazil Connection – managing risk in the international food supply chain*' and also co-author of the UKIBC Report '*India Agri-Food Supply Chains: Overview and Opportunities*'.

Global 78 Limited is focused on helping commercial clients discover new perspectives for success in local and international markets and for delivery of real bottom-line improvements. It also undertakes research for public sector policy-making. Food supply chains are complex. Innovation, resilience and sustainability are all vital elements for successful policy, strategy, and operations. The Global 78 team therefore provides clients with quality research, specialist advice, and support for implementation.

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