This knowledge summary focuses mainly on risk management in food supply chains. Similar to the risks arising in other supply chains, food supply chains can be universally affected by a number of different factors all at once all resulting in vulnerabilities and potential risks.

For example in the UK, freak weather conditions such as the drought of 2006 and the floods of the summer of 2007 - have combined to hit crop yields. Vegetables and wheat have seen particularly large increases, as have milk and other dairy products. Many British dairy farmers have gone out of business in the last decade because they were getting such poor prices. The resulting threat of shortages, coupled with an increase in demand for milk from China, has produced a spike in prices.

Internationally, supplies of animal feed crops such as maize and soya have suffered, reducing supply which drives the prices up - leading to higher prices of meat, particularly chicken and pork. On top of this, the higher cost of petrol means transport costs are also rising sharply, which again pushes up prices.

Higher grocery bills are a particular blow to low or fixed income groups such as pensioners because these take up a huge slice of their weekly spending.

Mindful of the challenges facing its membership, The Chartered Institute of Purchasing & Supply joined together with Cranfield University to undertake a study into supply chain risk management. Mainly focused on food supply, the survey included four key themes:

- awareness of purchasing and supply chain related risk amongst members and their organisations
- purchasing and supply chain related risk identification and assessment
- methods or tools currently in use to manage these risks
- achieving even better risk management.

(Peck 2005)

The findings of this survey suggest that although high-profile events such as corporate governance scandals, international terrorism and civil contingencies requirements have propelled corporate risk management and security into the headlines, they appear to have had relatively little impact on awareness of risk management in purchasing and supply. The same can be said for insurance requirements. Instead this survey shows that the everyday concerns of the ‘business of business’ emerge overall as the stronger drivers. Responding to customers and changes in business strategy came through as primary drivers. Whilst the most frequently reported major factor in raising awareness of supply chain risk was recent experience of severe disruption or loss. Almost 30% of respondents reported this as a major influencer, with manufacturing businesses being the most likely to cite this factor.

Around 60% of organisations used on-going reviews of risk in purchasing and supply, or were currently engaged in a review.

However, one in five respondents reported no knowledge of any such review having ever been undertaken within their organisations. The public sector, followed by manufacturing/utilities, fared worst in this respect.

Looking at how organisations approach risk identification and management in purchasing and supply, a dichotomy emerges. Organisations were most likely to opt for either formal analysis across the business or informal analysis within purchasing and supply. Service sector organisations were most likely to rely on high level formal analysis across the business, whilst manufacturers were more prone to opt for informal analysis within the purchasing and supply functions. The public sector was evenly split between the two.
Turning from suppliers to customers, the research revealed that over 70% of respondents stated that lead times to customers were included in routine monitoring. Just over 60% also indicated that availability of company products/services was likely to be included. As ever though, the devil is in the detail and marked differences appear between the sectors.

Moving on to monitoring for specific scenarios, respondents were asked to indicate whether routine monitoring for a range of potentially disruptive events took place within (or was shared with) their own organisation’s purchasing and supply functions. A number of scenarios were put forward, ranging from IT upgrades, mergers and acquisitions through to natural disasters and terrorist attacks. Results showed that significant changes in the trading environment topped the list, being routinely monitored in almost 60% of respondents’ organisations. Again civil emergencies and natural hazards/disasters came in at the bottom, with only around 22% of respondents watching out for these. Looking a little deeper, clear sector differences again emerged:

- 80% of the transport/distribution and retail organisations routinely monitored for transport and communications and infrastructure failures, unlike half of all manufacturing/utilities and financial/business service firms
- only just over 40% of public sector organisations had infrastructure failures on the radar. Public sector organisations were much more likely to be vigilant when it came to disruptions from IT upgrades and new systems implementation. 38% of them also routinely monitored for man-made civil emergencies. Only just over 18% of manufacturing/utilities did the same
- the manufacturers were most sensitive to the potential impacts of mergers and acquisitions, possibly resulting in consolidation or restructuring of their industry (over 68%)
- for the financial/business services companies, political and economic changes in the macro-environment that were most likely to feature (over 68%). Though the transport/distribution/retail cohort were even more likely to be monitoring these macro-environmental factors (over 73%).

In contrast, financial/business services are more likely than other groups to overlook immediate suppliers in risk assessments. In terms of scope, the assessments vary, but the following provide some indications:

- price competitiveness, quality approvals and previous performance are included in supplier selection and monitoring in over 90% of cases
- supplier’s size and financial status was present in over 80% of cases
- around 57% of organisations considered the impact of supplier location on total lead times
- the strategic direction of the supplier and the percentage of order book held by a respondent’s organisation were considered in only 53% of cases
- mismatches with information systems or product/service lifecycles were included in less than 40% of supplier risk assessments
- less than 40% of organisations considered suppliers’ business continuity planning in risk assessments
- less than a third of organisations were likely to routinely monitor their suppliers’ own procurement and risk sharing policies.

When it comes to risk assessments in respect to their immediate supplier base, the survey shows that organisations engaged in transport, distribution and retail are most likely to require risk assessments for all first tier suppliers as part of their selection process.

### Risk assessment of immediate supplier base

<table>
<thead>
<tr>
<th>Organisation’s policy towards risks assessments of the immediate supplier base</th>
<th>Manufacturing /utilities</th>
<th>Financial /business services</th>
<th>Transport /distribution / wholesale /retail</th>
<th>National /local government /education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part of supplier selection, applied to all suppliers</td>
<td>32.6</td>
<td>37.5</td>
<td>44.4</td>
<td>34.8</td>
</tr>
<tr>
<td>Conducted on strategic suppliers only</td>
<td>23.9</td>
<td>29.2</td>
<td>33.3</td>
<td>21.7</td>
</tr>
<tr>
<td>Conducted on a discretionary case by case basis</td>
<td>30.4</td>
<td>12.5</td>
<td>16.7</td>
<td>25.1</td>
</tr>
<tr>
<td>Not usually included in risk assessment activities</td>
<td>13.0</td>
<td>20.8</td>
<td>5.6</td>
<td>13.0</td>
</tr>
<tr>
<td>Other</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>4.3</td>
</tr>
</tbody>
</table>
When it came to the methods and tools currently in use to manage supply chain risk, the survey reveals that the two methods are very widely used. Almost three quarters of organisations (73%) reported using fixed price contracts to manage risk, nearly as many used close collaborative working with suppliers (71%). Collaborative working as a risk management approach was particularly prevalent amongst manufacturers (almost 82%). In contrast, technological solutions and simulation modelling are rarely used. Simulation modelling is most likely to be used in the transport/distribution/retail sector (11%). On a more general level, nearly three-quarters of respondents (around 74%) indicated that significant supply chain failures were reported and recorded. Disappointingly, only 45% recorded or reported ‘near misses’.

### Methods used to manage risk in purchasing and supply

<table>
<thead>
<tr>
<th>Method</th>
<th>Manufacturing / utilities</th>
<th>Financial / business services</th>
<th>Transport / distribution / wholesale / retail</th>
<th>National / local government / education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed price contract with suppliers</td>
<td>73.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Close collaborative working with suppliers</td>
<td>71.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dual sourcing</td>
<td></td>
<td>59.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Careful drafting of guarantee contracts</td>
<td></td>
<td>47.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contingency/scenario planning</td>
<td></td>
<td>46.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchasing or supply chain register</td>
<td></td>
<td>36.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vendor managed inventory agreements</td>
<td></td>
<td>33.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business interruption insurance</td>
<td></td>
<td>28.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hedging or options</td>
<td></td>
<td>18.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory/parts pooling</td>
<td></td>
<td>17.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outsourcing of high risk activities</td>
<td></td>
<td>17.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technological solutions</td>
<td></td>
<td>7.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simulation modelling</td>
<td></td>
<td>3.6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The last section of the survey investigated levels of satisfaction with approaches to risk management in purchasing and supply, within respondents’ organisations. This study reveals that most respondents (over 65%) were satisfied with the risk management practices and procedures currently in place. A third of respondents were not.

Level of satisfaction

- Very dissatisfied: 6.3%
- Fairly dissatisfied: 25.2%
- Reasonably satisfied: 26.1%
- Not stated: 2.7%
- Extremely satisfied: 1.8%
- Fairly satisfied: 37.8%

Representatives from financial/business service companies were most unhappy, whilst those from transport/distribution/retail were most likely to be satisfied. However over 41% of respondents identified insufficient time and resources within purchasing and supply as a fairly major or major issue, limiting the effectiveness of their organisations’ management of supply chain risk. A third of those who replied identified lack of time and resources elsewhere in the organisation for as a significant problem. Almost 28% indicated that conflicting requirements at functional and strategic business level was major or fairly major limitation. Whilst 27% felt that limited knowledge or understanding of the available tools and techniques by colleagues elsewhere within the organisation was a significant hurdle. Difficulty in justifying investment in risk management (in terms of return on capital employed) was one of several other factors that were felt to present a major or fairly major barrier to better risk management for around a quarter of those who replied.

Finally, respondents were given the opportunity to add any additional thoughts as to what impacts, inhibits or improves the management of purchasing and supply chain-related risk. Fourteen respondents’ commented and their responses are presented right:

- “Answers are directly related to high value contracts with high strategic content. In a decentralised procurement system it isn’t possible to assess other areas completely” (Higher education).
- “Market is changing so fast it is difficult to keep up with them” (Food manufacturing company).
- “General lack of understanding at board level to the impact and contribution of purchasing to company strategy” (Homecare products company).
- “Basically we have insufficient resources to adequately address this area”. (Motor retailing & service)
- “Better understanding of freight management” (Multimedia company).
- “Difficulty in buy in from user departments internally”. (Port company).
- “Fundamentally understood within management structure” (Chemical company).
- “In my industry there are a small number of suppliers selling specialised products. Most are good. However there is a great reliance on these few and their good performance” (Manufacturing company).
- “Lack of appreciation at the top of risk management issues and assumptions about the operating environment” (Higher education).
- “Lack of time, manufacturing is at the moment very firefighting through the integration, and some things have been put to the bottom of the list” (Building products manufacturer).
- “Local government, such as town/parish councils look at ‘sector’ issues and good procurement needs much more sector promotion” (Local government).
- “Main issue: resource/budget/availability in project environment. Secondary - process knowledge needs improvement” (Manufacturer of transport vehicles)
- “The bureaucracy of EU procurement law and the prescriptive nature of standing orders” (Local government).
- “Time to market pressures general attitude/appetite for risk” (Investment bank).
The findings of this survey suggest that although high-profile events such as epic corporate governance scandals, the impact of international terrorism, and civil contingencies requirements have captured the headlines, they appear to have had very little impact on awareness of risk management in purchasing and supply professionals. The same appears to be true of insurance requirements. Instead it is issues connected with the much more mundane ‘business of business’ that emerge overall as the stronger drivers. The commercial necessities of customer requirements and strategic change, followed by corporate social responsibility concerns, were found to hold the greatest sway. However it is worth noting that although a number of other factors listed appeared overall to have little impact on awareness of risk in purchasing and supply. The survey revealed that several of the factors did represent a very significant issue to a minority of the organisations surveyed. The most frequently reported major influencer of supply chain risk was actually a recent experience of severe disruption or loss. Around 30% of all those surveyed rated this as a ‘5 out of 5’ for magnitude. For manufacturing businesses (the single largest group to respond to this study) experience of recent disruptions to supply figured more strongly than all other concerns. For other sectors this was not the case.

In fact one theme that emerges throughout this study is that that when it comes to risk management in purchasing and supply, one size is unlikely to fit all. There are quite significant differences between organisations and sectors. The frequency with which major risk reviews are conducted, the wider scope of supplier selection and monitoring programmes, through to the types of potentially disruptive scenario organisations routinely monitor for, all vary between organisations and between sectors. These may reflect inherent differences in risk profiles between sectors.

Certain, arguably predictable, commonalities are present in supply chain risk management methods. For example, the tried and trusted supplier management ‘qualifiers’ including price competitiveness, quality assurance and delivery schedule adherence or previous performance, are almost universally applied. Similarly, fixed price contracts were the mostly widely used risk management tools, whilst close collaborative relationships with suppliers were also widely employed, particularly in manufacturing businesses. However, looking beyond these ‘old chestnuts’, this survey reveals a picture of great diversity.

In terms of whether there is an appetite for more effective risk management in purchasing and supply, the initial response could be ‘probably not’, as on average, the majority of respondents seemed broadly satisfied with current approaches to risk management. However a sizable minority of respondents are clearly not happy with their current provision. Could most do better? The answer is probably yes. This survey found that a whole range of factors create real barriers to improvement for a significant minority of organisations. To dismiss these as insignificant to those concerned would be to sweep their difficulties under the carpet.

This study therefore concludes that better risk management in purchasing and supply starts by recognising that there is diversity between sectors. Some ‘best practice’ approaches to supply chain risk management may be universal, but others may not. Moreover a number of limiting factors are in play within a significant proportion of respondents’ organisations, not least the shortage of time and resources. Whilst encouraging organisations to devote more valuable time and resources to these matters is unquestionably a challenge, there are other shortcomings that can be addressed more readily. Greater awareness and understanding of available tools throughout the organisation, or recognition by senior management that there may be inherent conflicts between functional and strategic management concerns are amongst the issues highlighted in this study. Shortcomings of this kind need to be acted upon if organisations are to open the way to better risk management in purchasing and supply.

If the findings of this report have been of interest to you, you may also want to view ’Resilience in the Food Chain: A study of Business Continuity Management in the Food and Drink Industry’ Final Report to the Department for the Environment, Food and Rural Affairs, also by Helen Peck. This can be found at: