The Wood Pallet & Packaging Market in 2015

A MARKET RESEARCH REPORT PREPARED FOR

TIMCON

&

THE FORESTRY COMMISSION

BY

JOHN CLEGG CONSULTING LTD

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timber packaging and pallet confederation

Forestry Commission

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Foreword

After a years' absence, I am delighted to launch our annual market 2015 report for the timber pallet and packaging Industry.

Once again, I'd like to take the opportunity in thanking the Forestry Commission for their support with this comprehensive overview of our industry, based on a survey of TIMCON's membership, which in turn accounts for in the region of70% of timber pallet and packaging activity across the UK. Their support shows how important our industry is to the forestry sector.

Many of you will know how I feel essential this piece of work is for our Industry. It provides a barometer of scale, not only of the companies that manufacture and repair these products, but because they are used in the vast majority of supply chains, in the economy as a whole.

I know that many other national associations are envious of our report. When it comes to lobbying various government bodies and helping put together various PR work, it is of fundamental importance.

Developing a sustainable, circular economy, is increasing in importance in Europe and wood has a vital role to play. The report highlights how much of this renewable resource - that absorbs and stores carbon from the atmosphere as it grows - we are using, and through recover, repair and reuse, how long we are using it for.

It also shows that we continue to be a major provider of UK jobs. TIMCON members alone employ close to 3,000 people in 120 locations, including rural sites, across the country.

On behalf of TIMCON and the Forestry Commission, our thanks go to everyone who participated in providing Guy with all the information used in this report. I trust you will find it useful and for those of you who on this occasion did not participate hopefully you will with the 2016 report; I honestly believe it is an immensely important document for us all.

Finally, I would just like to add my personal thanks to Guy Watt for all his work in pulling together this complicated report and for someone from out with the pallet and packaging industry he has shown great patience and determination in gaining the necessary understanding of the industry.

John Dye, President, Timber Packaging & Pallet Confederation (TIMCON)

EXECUTIVE SUMMARY

The main findings of the market analysis of the wood pallet and packaging industry are that:

- In 2015 in the UK the estimated number of new wooden pallets manufactured was 42.26 million and the estimated number of wooden pallets repaired was 39.0 million.

- In 2015 in the UK the manufacturing of wooden pallets is estimated to have generated a total turnover for all companies of £281.57 million and the repair of wooden pallets resulted in a total estimated turnover for all companies of £104.2 million. The total turnover of companies involved in wood pallets and packaging in 2015 in the UK is estimated to have been £386 million.

- TIMCON members contributing information are estimated to have used approximately 705,641 cubic metres of wood for pallets and packaging in 2015, and of this total 66% was UK grown timber and 34% was imported. In total it is estimated that 887,000 cubic metres of timber grown in the UK was used in the manufacturing and repairs of pallets in the UK in 2015.

- The estimated sale price of new pallets for all TIMCON member companies providing information in 2015 was £6.70 per pallet which is a small increase from £6.54 in 2013. The average unit costs of inspecting and/or repairing a pallet varied widely.

- At least 8.7 million new pallets, manufactured by TIMCON member companies who provided information, were heat treated, and of this total approximately 41% were also kiln dried.

- The main initial end use markets in 2015 for new pallets manufactured by TIMCON members who returned forms was the construction industry which took an estimated 32% of the total. Other significant initial end use markets were Distributors (16%), Fast Moving Consumer Goods (14%), Chemicals (12%) and the Engineering and Automative Industries (10%).

- TIMCON estimates that there are approximately 250 million pallets currently in circulation in the UK and over 40 million new pallets are added to the supply chain annually. In addition many more pallets enter and leave the UK when goods are imported and exported. The number of wooden pallet based movements of goods in the UK in a year is estimated to be in excess of 1.5 billion.

- The wood packaging activities of TIMCON companies who provided information for this survey in 2015 indicated a related turnover of just over £13 million. The estimated quantity of wood used was 26,000 cu metres and the related employment was 89.

- All TIMCON members are estimated to have employed directly, or indirectly in outsourced activities, 2,944 people in 2015 at a total of 120 different sites throughout the UK. Of this total 44.2% of the employment related to new pallet production and 52.8% of the employment related to inspecting and/or repairing pallets.

- TIMCON member companies that provided information in 2015 forecast a weighted increase in turnover in the year ahead of 2.2%.

ABBREVIATIONS

Cu m	Cubic metres
FC	Forestry Commission
FEFPEB	Fédération Européenne des Fabricants de Palettes et Emballages en Bois (European Federation of Wooden Pallet and Packaging Manufacturers)
FMCG	Fast Moving Consumer Goods
ONS	Office for National Statistics
UKWPMMP	UK Wood Packaging Material Marking Programme

1 INTRODUCTION

Background

1.1. This is the sixth report on the wood pallet and packaging industry in the UK that has been jointly commissioned by TIMCON and the Forestry Commission. The aim of this series of reports is to provide more detailed information about this very important, sizeable industry, and to identify trends that are taking place within it.

1.2. TIMCON, the representative body of the wood pallets and packaging industry sees the commissioning of these reports as one of the range of valuable services that it offers its members, the wood packaging industry, government agencies and departments. It feels the information in these reports is of potential commercial benefit to companies within the sector as they provide companies with an overview of the changes taking place within the industry that may not always be apparent to companies from their own day-to-day operational activities. The information therefore has the potential to help companies build a better understanding of their commercial operating environment and how it might be changing. TIMCON also sees the information in these market research reports as providing an opportunity for raising the profile of the sector nationally about its size, economic contributions and the conditions its members face. TIMCON also uses this report to lobby government and help make the economic and environmental case for wood pallets and packaging.

1.3. As the wood pallets and packaging industry is one of the leading end use markets for sawn timber produced from roundwood grown in Britain, accounting for some 30%, the Forestry Commission needs to have a good understanding of this end use market for British grown timber, as well as all other markets for wood and wood products in UK. Short term changes in the market and long term trends may have policy implications at the national level which is why they have jointly commissioned these studies with TIMCON.

Aim of the Market Research

1.4. The overall aim of the market research into the wooden pallet and packaging industry in the UK presented in this series of reports is to identify the present state of the market and to track changes over time in a series of key parameters that have been selected by TIMCON and the Forestry Commission. Further details of the market research are given in Annex 1.

Confidentiality

1.5. The type of market research required to assess the state of the wood pallet market depends almost entirely on the support of companies operating in the sector. In deciding whether to supply information, companies need to know that the confidentiality of the commercial data they are asked to provide is recognised and that it will be extremely carefully protected and used in ways that will ensure that their operations cannot be recognised by their competitors, or anyone else connected with the sector. For this reason TIMCON and the Forestry Commission appoint an independent consulting company to undertake the research for them and they require the company to keep the information entirely confidential so that neither TIMCON, nor any other party, has any access at all to it. The consultants are also required to ensure that it is impossible to identify information relating to an individual company when presenting their market research results. These conditions of confidentiality have been strictly adhered to in preparing this report.

Acknowledgements

1.6. The accuracy of the market research results very much depends on companies completing and returning questionnaires. We would therefore like to thank all those companies that did so this year. It is very much appreciated.

1.7. We would also like to thank Nicholas Moore for all his help and patience in explaining the market research methodology that he developed over the years so that the results in this report

would be closely comparable to those in the previous market reports he produced.

2. MARKET RESEARCH METHODOLOGY

Market Research Objectives

2.1. The overall aim of the market research is to provide estimates of the total sizes of some key parameters of the UK wood pallet and packaging sector, based on the activities of TIMCON member companies; to identify how these parameters have changed from previous years, and, over the longer term allow TIMCON members to identify trends that may be starting to affect the sector and hence their activities. The objectives are given in more detail in Annex 1.

Structure of the UK Wood Pallet & Packaging Market

2.2. The wooden pallet and packaging industry comprises many small firms, a good number of middle-sized firms, larger firms and a number of very large firms operating within the industry. The activities of these companies are not homogenous, with differing emphases on manufacturing and repair of pallets and packaging, and they also have different ways of getting pallets to market. This is exemplified by the difference between manufacturers and pallet pool operators, with manufacturers mostly selling their output, while closed loop pallet pool operators rent pallets for use by customers.

Coverage

2.3. Fifty six pallet manufacturing, packaging and pallet pooling companies in the UK are members of TIMCON, which includes all the major ones, and together TIMCON estimates they account for 70% of all the pallet industry's outputs. The market research results for 2015 given in this report are based on a survey of TIMCON's members that was conducted in 2016.

2.4. In addition to the pallet, packaging and pallet pooling companies belonging to TIMCON covered in this survey, there are known to be a large number of mainly small companies and organisations involved in wood packaging in the UK that operate at some 600 separate sites with a number of companies having several registered sites. This is known because the sites are all registered with the UK Wood Packaging Material Marking Programme (UKWPMMP). The Programme assists companies to meet international plant health and phytosanitary standards. A number of packaging companies in the UKWPMMP are also TIMCON members.

2.5. In previous market research reports prepared by *timbertrends* for TIMCON, there was some fairly recent production survey data available for companies belonging to the UKWPMMP on which to base estimates of their pallet production and wood use. The estimated quantities were relatively very small, and the totals were shown separately, but were added into the final totals given in previous reports. As there is no more up-to-date production data for UKWPMMP member companies, it was decided by TIMCON that in future data relating to companies in this survey should be kept entirely separate from data relating to UKWPMMP companies. Totals given in this report will therefore not all be directly comparable with those given in earlier reports.

Market Research Methodology

2.6. The market research was conducted by John Clegg Consulting Ltd emailing all TIMCON members explaining about the market research being conducted independently, but on behalf of TIMCON, and asking them to complete and return confidential questionnaires. Based on ones used for previous surveys, different questionnaires were developed for companies manufacturing and repairing pallets and companies that operate pallet pools.

2.7. To overcome the gaps caused by companies not taking part in the survey by not returning the confidential questionnaires, estimates for all TIMCON members have been made using estimates based on other industry information. Further details of the market research methodology are given in Annex 1. Overall it is estimated that the data from the completed and returned questionnaires from TIMCON members in 2015, represented approximately 70% of all production by TIMCON member companies.

2.8. The results of the market research are given in the following sections. In presenting the results of this latest survey, which is for 2015, the data for 2012 and 2013 has been included for companies that provided information in both years so that trend comparisons can be identified, but data relating to WPMMP companies for earlier years has been excluded. Pool company data has not been included when looking at trend changes between 2013 and 2015 as comprehensive data for 2013 was not available to us.

3. PALLET PRODUCTION & REPAIRS

Survey Results

3.1. Based on the information provided by companies that completed and returned questionnaires, the total number of new pallets that they manufactured, or repaired in 2015 came to a total of 46.4 million. Out of this total 20.46 million (44.1%) were new pallets and 26.0 million (55.9%) were pallets that were repaired.

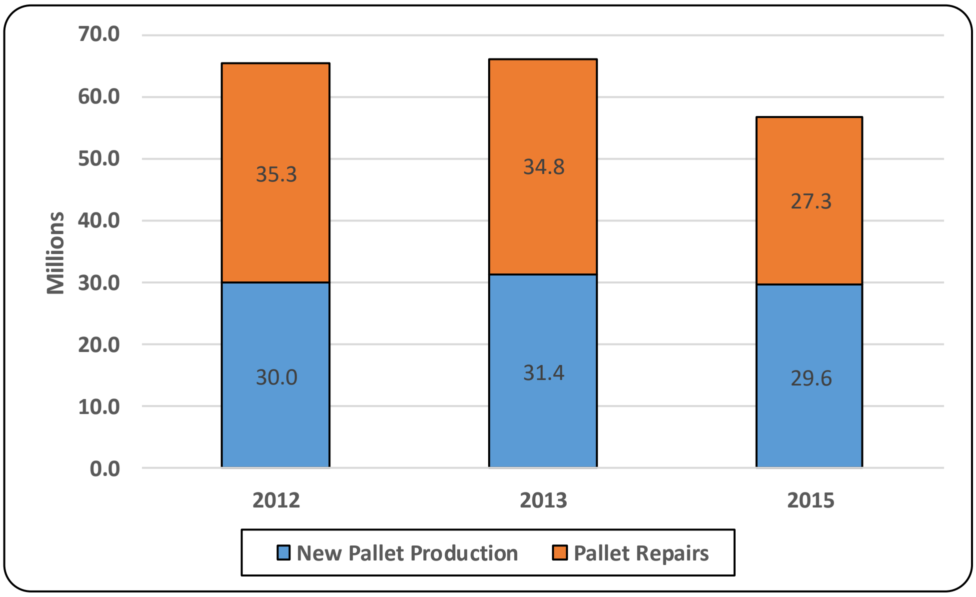
Estimated Quantity of Pallets Produced & Repaired by All TIMCON Members

3.2. An estimate of the total number of pallets manufactured and repaired by all TIMCON members in 2015 has been made using the same methodology as in previous years. This was done by supplementing the figures obtained from the returned questionnaires with estimates of turnover based on TIMCON membership categories for those members who didn't return questionnaires. Using this approach the estimated total number of new pallets manufactured by TIMCON members in 2015 was 29.6 million, and the number that were repaired was 27.3 million giving a total of 56.9 million pallets. The companies that completed and sent in forms in 2015 are estimated to account for 81% of the total relating to all TIMCON members.

3.3. Although shown in chart 3.1 for information and interest, ***the total numbers of new pallets manufactured and repaired in 2015 are not directly comparable to those for 2012 and 2013 given in previous survey reports*** because:

- Data relating to companies in the UK Wood Packaging Material Marketing Programme are excluded this year and the data in the chart allows for this.
- The response rate of companies returning questionnaires has been higher in 2015 than for the last survey which may account or some of the change.

Chart 3.1 Estimated Numbers of New Pallets Manufactured & Repaired by All TIMCON Members in 2012, 2013 and 2015



3.4. The chart shows that that the number of new pallets manufactured in 2015 almost equalled the number of existing pallets that all TIMCON members repaired and this percentage is fairly similar to the findings for 2012 and 2013. The number of pallets repaired by the pallet pools was approximately 5.5 times greater than the number repaired by other TIMCON members. The chart also suggests that the number of pallets being repaired is reducing which means that the pallets may be being used for longer before being repaired.

Estimated Production of New Pallets in the UK in 2015

3.5. Based on the information provided by TIMCON member companies that completed and returned questionnaires, the total number of new pallets they manufactured in 2015 was 20.46 million. The estimated production of new pallets by all TIMCON members in 2015 is estimated to have been 29.58 million. TIMCON estimate that their members accounted for 70% of all new pallet production in the UK in 2015 which gives an estimated total production of new pallets in the UK in 2015 of 42.26 million.

Estimated Number of Pallets Repaired in UK in 2015

3.6. Based on the information provided by TIMCON member companies that completed and returned questionnaires, the total number of pallets repaired in 2015 was 26.0 million. The number of pallets repaired in 2015 by all TIMCON members is estimated to have been 27.3 million. TIMCON estimate that their members accounted for 70% of all pallet repairs in the UK in 2015 which gives an estimated total for the number of pallets repaired in the UK in 2015 of 39.0 million.

4. Pallet Market Turnover

Survey Results

4.1. Using information given in the forms that were completed and returned by TIMCON members, their total wood pallet market turnover in 2015 was £194.7 million and of this total 71.3% (£138.8 million) arose from manufacturing new pallets and 28.7% (£55.9 million) arose from repairs to pallets.

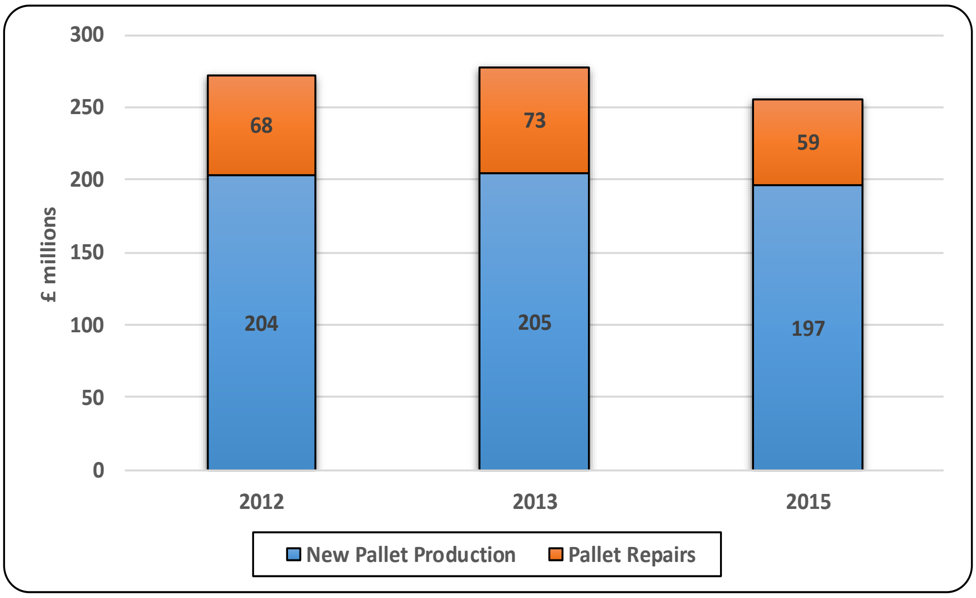
Estimated Turnover of All TIMCON Members

4.2. An estimate of the total turnover of all TIMCON members in 2015 has been made using the same methodology as in previous years by supplementing the figures obtained from the returned questionnaires with estimates of turnover based on the average unit price of TIMCON members who manufacture and repair pallets multiplied by estimates of TIMCON membership categories for those members who didn't return questionnaires. Using this approach the total turnover of TIMCON members is estimated to be £255.7 million with 77.1% (£197.1 million) arising from the production of new pallets and 22.9% (£58.6 million) arising from repairs. The survey results for total pallet market turnover of £255.7 million accounts for some 76% of the estimated turnover of all TIMCON members.

4.3. Although shown in chart 4.1 for information and interest, ***the 2015 turnover figures are not directly comparable to those for 2012 and 2013*** given in previous survey reports because:

- Data relating to companies in the UK Wood Packaging Material Marking Programme are excluded this year
- No attempt has been made to adjust the figures to accord with ONS ProdCom data as has been the case in previous years
- The response rate of companies returning questionnaires has been higher in 2015 than for the last survey which may account for some of the change.

Chart 4.1 Estimated Total Pallet & Packaging Turnover Figures for 2012, 2013 and 2015 for All TIMCON Members



4.4. The percentage of turnover relating to repairs was 23% in 2015 compared with 26% in

2013 and 25% in 2012.

4.5. Given that the 2015 estimate is not directly comparable to those for 2012 and 2013 for the reasons given in paragraph 4.3, the size of the estimate for new pallet production in 2015 nevertheless compares well with estimates for earlier years. The indicated reduced turnover in repairing pallets in 2015 suggests that the pallet pools may be using pallets for longer before being repaired. What cannot be done is to draw any firm conclusions from chart 4.1 about changes in overall activity of TIMCON members in 2015 compared with earlier years.

Estimated Turnover Relating to New Pallet Production in the UK in 2015

4.6. Based on the information provided by companies that completed and returned questionnaires, their total turnover from the manufacture of new pallets in 2015 was £138.8 million. The estimated turnover from new pallet production for all TIMCON members in 2015 is estimated to have been £197.1 million. TIMCON estimate that their members accounted for 70% of all the new pallets produced in the UK in 2015 which gives an estimated total turnover for new pallet production in the UK in 2015 of £281.57 million.

Estimated Turnover Relating to Pallet Repairs in the UK in 2015

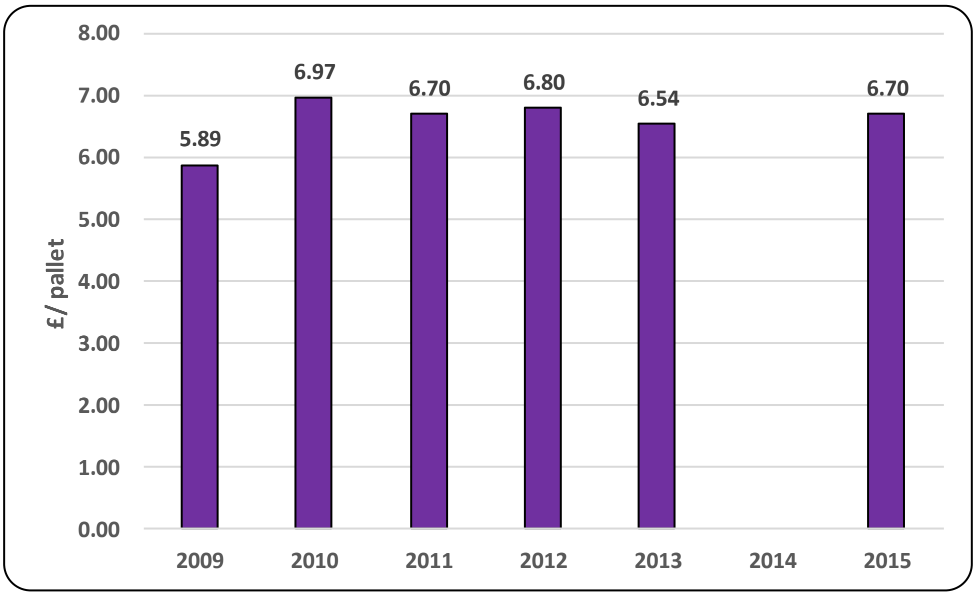
4.7. Based on the information provided by companies that completed and returned questionnaires, their total turnover from pallet repairs in 2015 was £55.9 million. The turnover of all TIMCON members that related to repairs is estimated to have been £58.6 million. TIMCON estimate that their members accounted for 70% of all pallet activity in the UK in 2015. If the estimated value of these pallet repairs is based on the average unit price of TIMCON members who manufacture and repair pallets, this gives an estimated total turnover from pallet repairs in the UK in 2015 of £104.2 million.

5. AVERAGE UNIT SALE AND PALLET REPAIR PRICES

5.1. Based on the figures given in para 4.2 and para 3.2 the estimated unit selling price of new pallets for all TIMCON members in 2015 was £6.70 per pallet and the average unit cost of repairing a pallet ranged from £1.02 to £3.90 per pallet, excluding sorting and inspecting only.

5.2. Chart 5.1 shows how the estimated average sale price of a new pallet in 2015 for all TIMCON members has varied over the years since 2009.

Chart 5.1 Average Unit Sale Price for New Pallets for All TIMCON Members 2009 – 2015



5.3. The chart shows that the average unit sale price for new pallets achieved by all TIMCON members has increased by just 2.5% over the last two years. In 2015 the average unit price for a new pallet equalled the average price achieved by all TIMCON members in 2011.

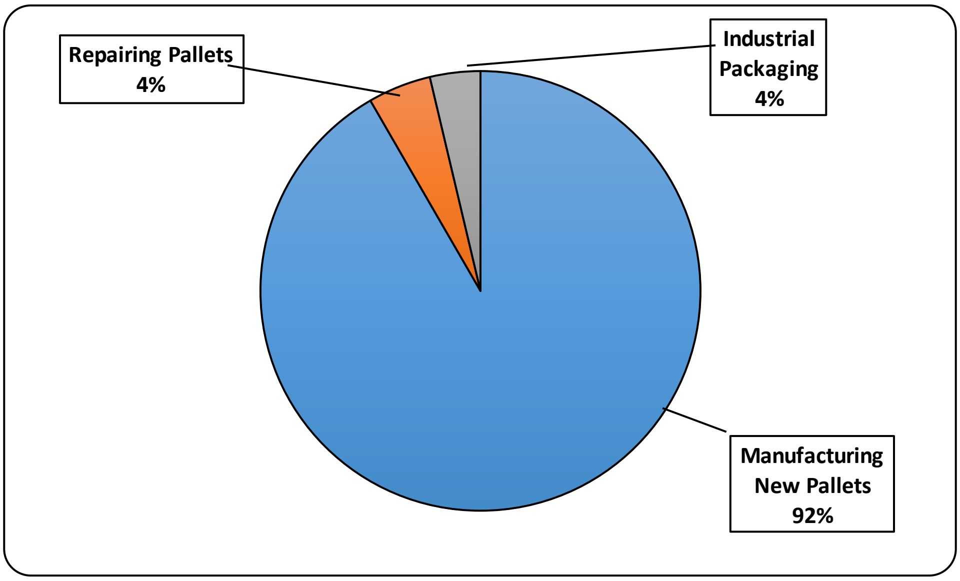
6. Wood Used in Pallet Production & Repairs

Survey Results

6.1. The total volume of wood products from all sources and of all types used in the pallet and packaging industry in 2015, based on an analysis of the information on the forms that were completed and returned, was 705,641 cu metres.

6.2. The ways the pallet and packaging industry used this wood are shown in percentage terms in chart 6.1, based on information in the forms that were completed and returned.

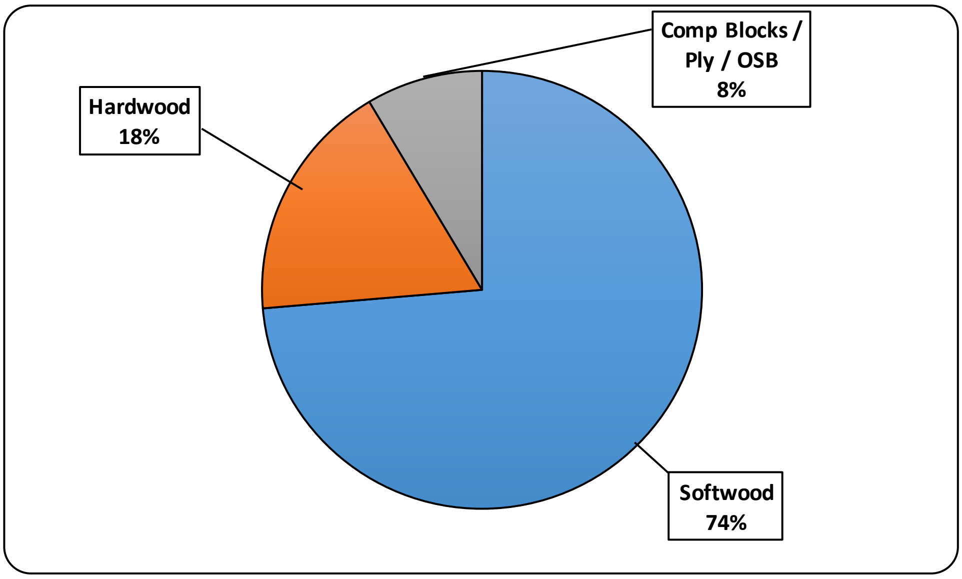
Chart 6.1 Uses of Wood by TIMCON Member Companies in 2015 based on Survey Returns



6.3. The chart shows that the majority of wood used by TIMCON member companies that returned forms is in the manufacture of new pallets.

6.4. The types of wood being used in manufacturing and repairing pallets and packaging in 2015 by TIMCON member companies are given in chart 6.2. The generic term of hardwoods covers the faster growing, light demanding species such as alder, aspen and birch.

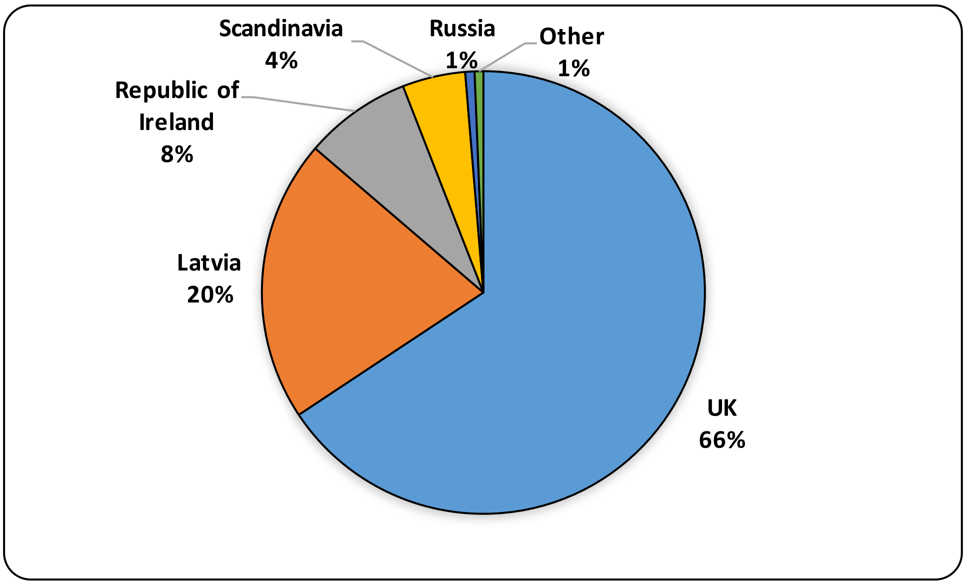
Chart 6.2 Types of Wood being Used by TIMCON Member Companies in 2015 based on Survey Returns



6.5. The chart shows that the majority of the wood used is softwood (74%).

6.6. The sources of the wood used by the pallet and packaging industry in 2015 based on survey returns is shown in chart 6.3.

Chart 6.3 The Sources of Wood used by TIMCON Member Companies in 2015 based on Survey Returns



6.7. The chart shows that TIMCON member companies sourced around two thirds of their wood from the UK (66%). Most of the faster growing hardwoods, such as alder, aspen and birch were sourced from Latvia.

Estimated Quantity of British Grown Wood Used by TIMCON Members

6.8. The companies that provided information estimated they used 705,641 cu metres of wood. Assuming these companies accounted for 75% of all TIMCON members' use of wood, the estimated quantity of wood used by all TIMCON members would be 940,854 cubic metres. If 66% of all wood used is grown in the UK, then the amount of British grown wood used by TIMCON members is estimated to be 620,964 cubic metres.

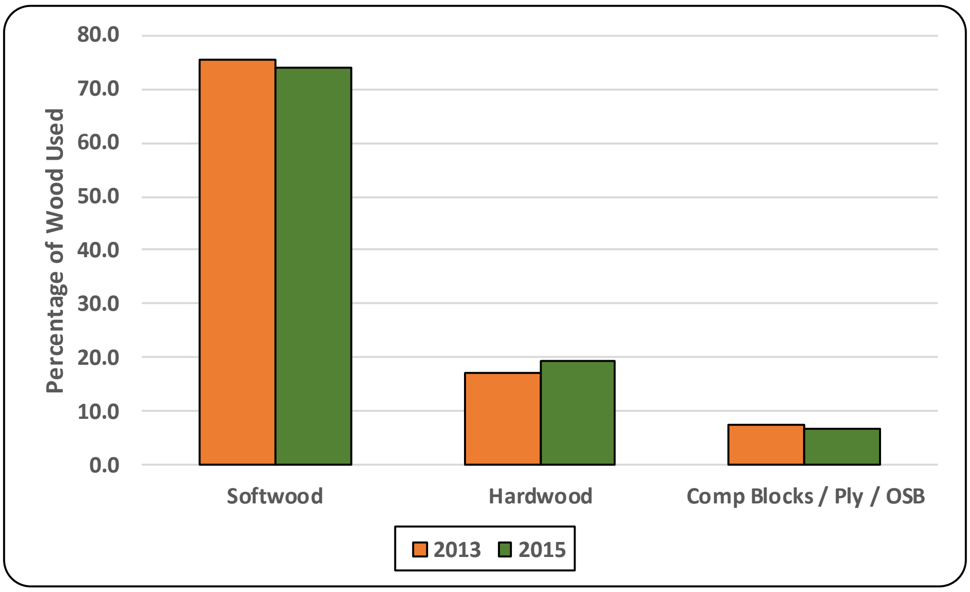
Estimated Quantity of British Grown Wood Used in Pallet & Packaging in the UK in 2015

6.9. TIMCON members are estimated to account for some 70% of UK pallet production and therefore the estimated use of UK grown timber in the UK in 2015 would have been 887,092 cubic metres.

Sample Trend Changes 2013 - 2015

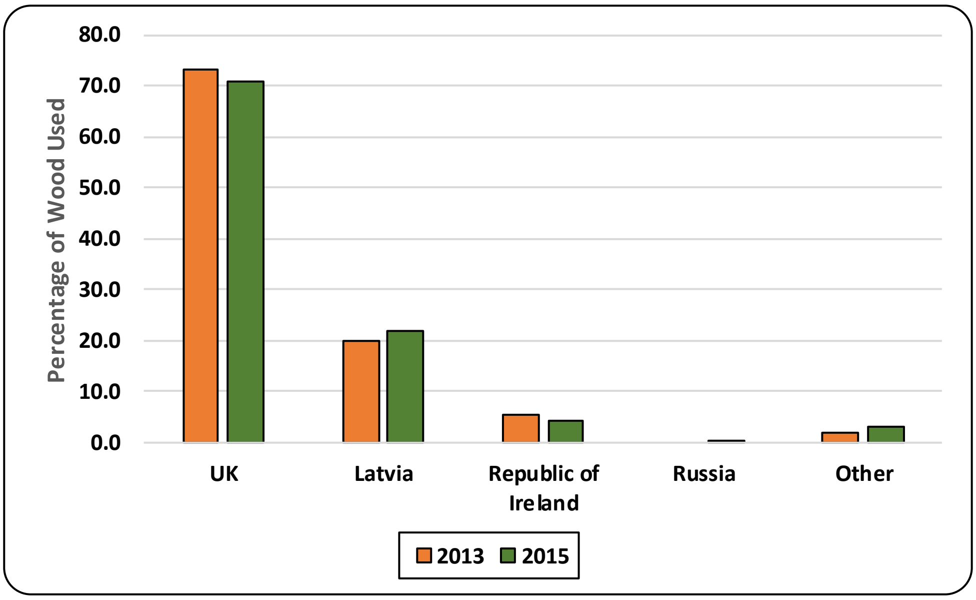
6.10. Chart 6.4 shows that there has been very little change in the types of wood being used for pallet making and packaging between 2013 and 2015 by TIMCON member companies that returned forms in both years.

Chart 6.4 Percentages of Types of Wood Used in Pallet Manufacturing and Packaging by TIMCON member Companies Returning Forms in both 2013-2015



6.11. There has also been relatively little change in where the wood has been sourced between 2013 and 2015 as chart 6.5 shows. There appears to have been a slight reduction in the use of UK sourced wood which may reflect some changes in UK wood prices relative to the prices of imported wood. Comparing the percentage sourced in the UK in chart 6.5 with the results for the TIMCON member companies that returned forms indicates that other companies may be making greater use of imported wood. One of the biggest influences on companies' decisions on the sourcing of wood is exchange rates.

Chart 6.5 Percentage Quantities of Wood Sourced by Location by TIMCON member Companies Returning Forms in both 2013-2015



6.12. The changes in where the reference sample group source their wood changed very little between 2013 and 2015.

7. HEAT TREATMENT & KILN DRYING OF NEW PALLETS

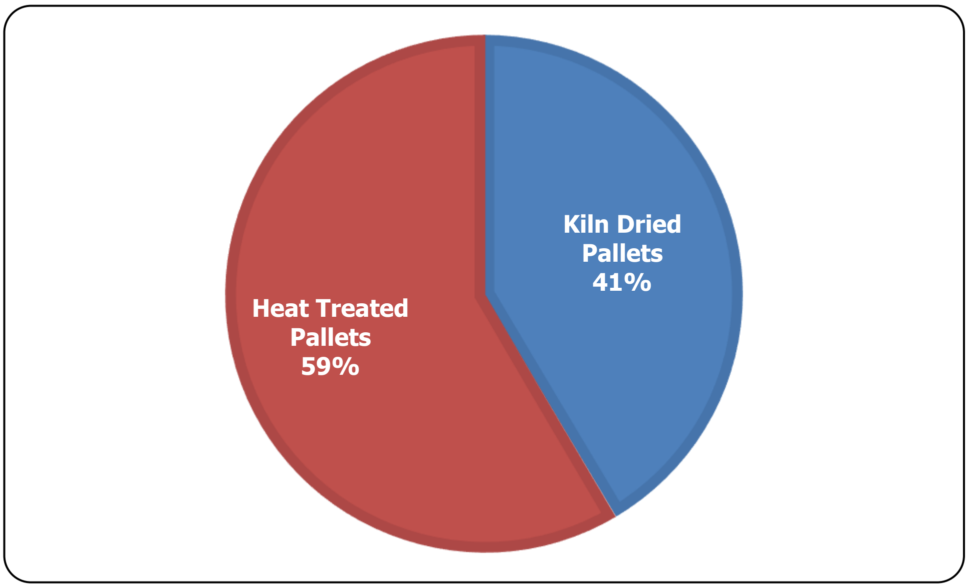
Overall Survey Results

7.1. Heat treatment is required for pallets which may be involved in the export of goods outside of the EU. This is to limit the potential for the spread of insects.

7.2. Based on the survey returns, some 8.7 million manufactured pallets in 2015 were heat treated. This represents 41% of all newly produced pallets in 2015 based on information from companies who completed and returned forms.

7.3. Chart 7.1 provides a percentage breakdown by heat treatment type of the total number of new pallets which were heat treated, based on the information given in the completed 2015 survey returns. The difference between the two treatments is that kiln drying reduces moisture content and helps prevent mould on pallets and packaging and may be essential to meet the requirements of particular customers.

Chart 7.1 Percentages by Heat Treatment Type of the Estimated Total Number of New Pallets given some Form of Heat Treatment in 2015 Based on Returned Forms

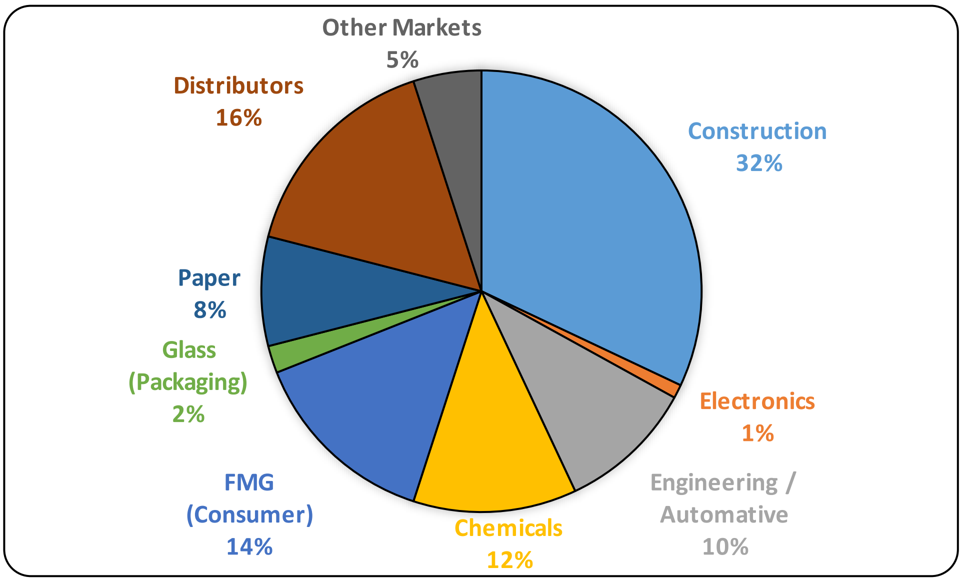


8. INITIAL END USE MARKETS FOR NEW PALLETS

Overall Survey Results

8.1. The initial end use markets for new pallets manufactured in the UK based on an analysis of the returned questionnaires is given in chart 8.1.

Chart 8.1 Initial End Use Markets for New Pallets Manufactured in the UK by TIMCON Members who Took Part in the Survey in 2015

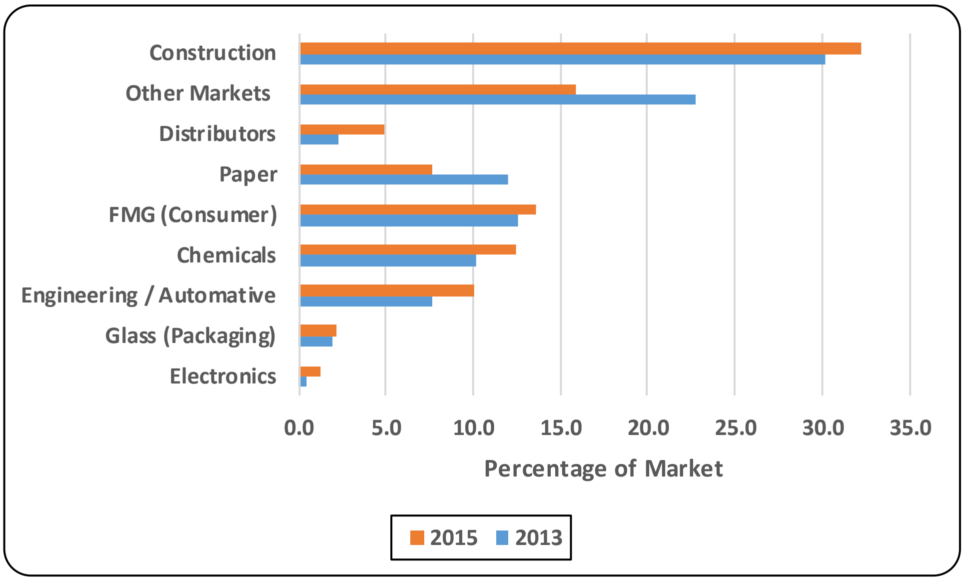


8.2. The chart shows that the construction industry is by far the largest market for new pallets for the companies that returned completed forms and accounted for just under a third of total new pallet production in 2015. The quantities of new pallets being sold to Distributors, and to companies that handle Fast Moving Consumer Goods[1], Chemicals, and Engineering / Automative goods are all very similar and are individually almost half the quantity of pallets that were sold to the construction industry.

Trend Changes in End Use Markets 2013 - 2015

8.3. After adjusting for the different number of companies taking part in the survey, Chart 8.2 compares the end use markets identified in 2015 with those for the same companies in 2013.

Chart 8.2 Changes in End Use Markets for New Pallets Produced in the UK between 2013 and 2015



[1] Fast Moving Consumer Goods are products that are sold quickly and at relatively low cost e.g. non-durable goods such as soft drinks, toiletries, over-the-counter drugs, processed foods and many other consumables.

8.4. There is no significant percentage change in the importance of the construction industry as the main end use market for new pallets in both 2013 and 2015. There is a small percentage increase in all categories except in the 'Other Markets' and the Paper industry where there have been notable reductions in the shares of both categories overall. The main differences in market categories between 2013 and 2015 in chart 8.2 are the differences in the percentages that go to 'Other Markets' and Distributors. The differences are likely to have occurred because of the way one or more companies have defined their initial end use markets when completing their survey forms rather than a major significant shift in the end use markets themselves.

9. WOOD PACKAGING MARKET

9.1. The TIMCON member companies who returned questionnaires that separately identified their industrial wood packaging activities had an aggregate turnover of £13.29 million relating specifically to those activities in 2015. The total quantity of wood used in these activities was estimated to be approximately 26,000 cu m and the total number of employees was 89.

9.2. Given that there are some 600 registered sites where packaging activities are potentially taking place, it seems likely that the packaging information captured by this survey is a significant underestimate of the packaging figures for the UK. The overall size of the market cannot be accurately assessed on the information available at this stage.

10. ECONOMIC CONTRIBUTIONS OF THE SECTOR

Economic Contributions of TIMCON Member Companies

10.1. Wooden pallets and packaging are an integral and essential part of the supply chains of many companies involved in moving materials and products throughout the UK and overseas. TIMCON estimates approximately 250 million pallets are currently in circulation in the UK and over 40 million new pallets are added to the supply chain each year. In addition many more pallets enter and leave the UK when goods are imported and exported. The number of wooden pallet based movements of goods in the UK in a year is estimated to be in excess of 1.5 billion.

10.2. As the use of wooden pallets and packaging is so closely linked to the supply chains of companies involving consumer goods, building materials and industrial products, the activities and profitability of TIMCON member companies closely reflect the conditions of the UK economy. This means they are some of the first companies to feel the effects of cost pressures in their raw material supply chains, such as exchange rate changes, fuel costs and wood prices which account for some 70% of the cost of a new pallet, and also pressures on prices they can charge for pallets and packaging as these get fed down the supply chain from retailers, distributors and manufacturers and other intermediaries in that supply chain.

10.3. This market research has indicated that TIMCON members had an estimated turnover of £255.7 million in 2015 (para 4.2). This excludes the turnover of companies manufacturing and repairing pallets that are not TIMCON members and many companies involved in wooden packaging who are also not members of TIMCON, but operate one or more of the 600 sites registered under the UK Wood Packaging Material Marking Programme.

10.4. Based on the completed forms returned by TIMCON members for 2015, they have some 83 different sites from which they operate and if it is assumed that the other TIMCON members who didn't return forms had just one site, then it would indicate that there are over 120 sites throughout the UK which TIMCON members operate.

10.5. The TIMCON member companies that supplied information for the 2015 survey employed a total of 2,559 people directly and in outsourced pallet repair operations. The figure includes a reduction to avoid the situation where the responses would have included the same employees twice. An estimate of the total turnover of all TIMCON members in 2015 has been made based on the estimated total turnover of all TIMCON member companies and the estimated turnover per employee from the survey companies and this indicates that the total employment generated by all TIMCON members in 2015 was approximately 2,944.

10.6. The estimated figure of 2,944 in 2015 is significantly higher than the estimated totals of 2,269 in 2012 and 2,312 in 2013. This difference has occurred for the following reasons:

- There was a higher response rate from TIMCON member companies providing 2015 data compared with 2012 and 2013
- The figure includes employees in companies doing outsourced pallet repair work for TIMCON member companies where the figures will not have been included elsewhere.
- It includes some employees involved in packaging in TIMCON member companies identified by the present survey.

10.7. Of the estimated total employment of 2,944 people provided by TIMCON members 44.2% are estimated to be involved in new pallet production, 52.8% with repairing pallets and 3% in packaging.

Office for National Statistics Sector Estimates

10.8. In previous TIMCON market reports attempts were made to relate estimates of turnover and pallet production and repairs with similar ProdCom figures produced by the Office for National Statistics (ONS). Following discussions between TIMCON and Nick Moore of *timbertrends* and ONS staff in 2013 and 2014, the ONS reviewed its methodology and slightly changed the way it now presents its estimates of national data on pallet making and repairs.

10.9. Table 10.1 compares the estimates of turnover and pallet production numbers based on the findings of this 2015 market assessment for the UK with the estimates made for the same parameters as ONS.

Table 10.1 Comparison of ONS Estimates for Sector with Estimates prepared for this 2015 Market Assessment

	ONS 2015 Estimates	2015 Market Assessment for UK	2015 Market Assessment for UK as % of ONS Estimates
Sales of New Pallets / turnover (£000's)	287.8	281.57	97.8 %
Number of New Pallets Sold (millions)	47.3	42.26	89.3 %
Sales of Repaired[1] Pallets (£000's)	146.3	104.3	71.2 %
Number of Pallets Repaired (millions)	44.1	39.0	88.4 %

Footnote: [1] ONS use the term 'refurb pallets' and not repair.

10.10. There are a number of observations that can be made about the results given in the table:

a) The estimates made for sales of all new pallets in the UK for 2015, and the estimates for the number of new pallets repaired and sold in the UK in 2015 are all within the 12% range below the totals estimated for these parameters for the sector as a whole by ONS. This closeness and its degree of consistency suggests a degree of robustness for the figures for 2015 for these three parameters based on this market analysis and ONS estimates.

b) The divergence of the estimated turnover figures for pallet repairs in the UK between this 2015 market assessment and the ONS estimated total is significant. There is no obvious explanation for this divergence. Given that the estimates that have been made for the other 3 parameters for all TIMCON members in 2015 are all within the 12% range of the ONS figures, it would suggest that the difference may lie in the ONS' estimate for the sales of repaired pallets. One possible reason could be that ONS data collection is based on information from a random sample of companies that repair pallets based on turnover. This would not take into account the structure and organisation of pallet repairs in the UK where a relatively few companies undertake a high volume of repairs for a few organisations and account for over 50% of the pallets repaired annually in the UK. These high volume operational prices are captured by the TIMCON members survey, but perhaps only a few are in the ONS' random sample for collecting their national statistics based just on company turnover.

c) Another possible reason for some discrepancy in the figures could be a lack of clarity or misunderstandings relating to what is meant by 'repaired' pallets and 'sorted/inspected' pallets. The conclusion that can be drawn for this is that the ONS estimate for the sale price of repaired pallets in the UK is likely to be an overestimate rather than there being a mistake in the figures obtained through this market analysis. The Fédération Européenne des Fabricants de Palettes et Emballages en Bois (European Federation of Wooden Pallet and Packaging Manufacturers) (FEFPEB) have experienced similar discrepancies between the figures reported by official government agencies and national trade associations on the size of the pallets and packaging market throughout Europe.

UK Timber Production & Consumption of Pallets and Packaging Material

10.11. It is estimated from this market assessment that 887,000 cubic metres of British grown timber was used in the pallet and packaging industry in the UK in 2015. The Forestry Commission's annual sawmill survey estimates that approximately 30% of the production from the larger UK sawmills is sold for use in the pallet and packaging industry. If this percentage is applied to the estimated 3.45 million cubic metres of sawn timber produced by UK sawmills in 2015, it would indicate that the UK pallet and packaging industry used approximately 1.03 million cu metres of UK produced sawn timber (Forestry Commission Forestry Statistics 2016). The estimate of 887,000 cubic metres from this market analysis is within 14% of the Forestry Commission's estimate.

10.12. Both figures are estimates and are relatively close given that both figures have been reached using different methodologies and assumptions. In the case of the Forestry Commission's estimate their figure is based on an estimated percentage figure developed from production in the larger sawmills which may not be a representative sample of production in all sawmills in the UK in 2015.

11. TIMCON MEMBER SALES OUTLOOK FOR YEAR AHEAD

11.1. TIMCON member companies were asked what increase or decrease in sales they expected in the year ahead. Of the companies that responded, that account for about 75% of TIMCON members, 54.6% of responding companies expected sales to grow in the year ahead by various amounts, 36.4% expected no change in sales and 9% expected a fall in sales of 3%. The weighted average expected total net increase in sales in the year ahead was 2.2% for responding companies.

12. Conclusions

12.1. This market assessment has provided some detailed information on the pallet and packaging industry in the UK in 2015. The estimated figures given in this report match up closely with some key parameters for the wood pallet and packaging industry that have been developed using different methodologies. The only significant difference in figures is in the estimated turnover relating to pallet repairs. One possible explanation is that ONS used a random sample of companies for collecting their data in what is a sector that has a very unique structure. A stratified random sample based on company size would be likely to result in ONS obtaining a lower estimate for sales of repaired pallets. There can also be big differences in the costs involved in repairing and sorting/inspecting pallets which, given the number of pallets repaired annually, could also be responsible for some of the differences. TIMCON intends to initiate discussions with ONS about this important matter.

12.2. The figures given in this report depend on estimates and therefore they cannot be regarded as precise. If more companies contributed information for this type of market assessment, the accuracy of the results would be improved.

12.3. Information on wood packaging activities in this report only relates to TIMCON members who are involved with these activities and who provided information for 2015. The scale and economic significance of wood packaging activities in the UK is therefore unknown. The fact that there are some 600 sites registered under the UK Wood Packaging Material Marking Programme would suggest that in aggregate these companies and their activities may be of some potential economic significance.

12.4. One of the important results of this market assessment will be to provide those outside the wood pallet and packaging industry with a greater understanding and recognition of its importance to the economy.

John Clegg Consulting Ltd

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ANNEX

1. MARKET RESEARCH OBJECTIVES & METHODOLOGY

Market Research Objectives

1.1. The overall aim of the market research is to estimate the value and quantities of wooden pallets manufactured and repaired in the UK, leading to estimates of timber usage, and more specifically to:

1. Estimates of the value and/or quantity of
   - new pallet manufacture and repair in the UK
   - heat treated (ISPM15) pallets
   - kiln dried pallets
   - primary markets for new pallets
2. Estimates of timber consumption by pallet manufacturers in the UK, including estimates of timber supply by country.
3. To provide an estimate of how the industry might perform in the coming year.

Research Methodology

1.2. The methodology that has been used to obtain the results given in this report is the same as that used by Nicholas Moore of *timbertrends* who developed it from his experience in researching the market for the last five reports he has prepared for TIMCON and the Forestry Commission. Using the same methodology has the added benefit of allowing meaningful comparisons to be made between the results presented in this report and previous ones.

1.3. The research has been conducted by asking TIMCON members to complete and return questionnaires that had been emailed out to them with a covering email following a separate earlier email from TIMCON's President asking them to support this market research work. This overall approach was taken rather than using a stratified sampling method because of the diversity and scale in wood pallet making activities of companies in the sector and in the way they operate. Separate questionnaires, based on ones designed for previous surveys were developed for pallet producing companies and companies that operate pallet pools.

1.4. The survey data was supplemented by the addition of data from the TIMCON membership database which allowed estimates of turnover (among other features) to be made for the entire TIMCON membership – but specifically, for manufacturing members of TIMCON, as opposed to supplier members.

1.5. The calculation of turnover of TIMCON members was made by taking the mid-point of each turnover band and simply aggregating the turnover of companies in each band to arrive at a notional total of turnover for the TIMCON membership.

1.6. Where companies responded to the survey, their individual actual data was then reintroduced to the analysis, with the mid-point turnover figure for these individual companies withdrawn and replaced by the actuals provided. Consequently, a highly representative turnover figure could be derived, on the basis that some companies would fall below the mid-point turnover mark while others would be above that mark.

1.7. This process of 'adding-back' individual survey results to the mid-point aggregate turnovers for each band has resulted in good estimates from which to establish the detailed analysis that followed.

1.8. The availability of data from the five previous studies, revisions of data by key TIMCON members and information supplied by newly responding companies has continued to allow a better estimation of industry turnover.

Research Programme

1.9. The programme of work included the following tasks:

- Task 1: Revising and re-formatting questionnaires
- Task 2: Compiling the TIMCON survey sample
- Task 3: Writing and seeking approval for the covering email to accompany the survey questionnaire
- Task 4: Building the survey and analysis database to be used in the despatch and receipt of questionnaires
- Task 5: Emailing the questionnaires to TIMCON members
- Task 6: Receipt, checking and input of data to the analysis database
- Task 7: Sending out reminder emails to companies that did not respond
- Task 8: Liaising with Nicholas Moore & Stuart Hex on survey methodology
- Task 9: Analysis and interpretation of results
- Task 10: Writing of the draft report
- Task 11: Production of final report

1.10. The last task was to present the results to TIMCON members at their AGM in February 2017.