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Wood Packaging Study

Quantification of the Manufacture & Repair of Wood Packaging in the UK, 2011

A Study

for

TIMCON and the Forestry Commission



Forestry Commission



by

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Background to the Research:

Pallet and packaging manufacturers, pool operators and distributors in the UK are facing a number of competing pressures.

Many companies in the industry are experiencing substantially lower levels of demand from users as the economy continues to struggle to grow. This has created an ultra-competitive business environment which has placed severe pressure on operating margins, at a time when costs of energy, raw materials and services continue to escalate.

Pallet users are also under cost pressures which have contributed to a growing trend of buying fewer newly manufactured pallets and a greater incidence of repair and re-use. This has shifted emphasis away from higher value (new) production to lower value repairs. This has resulted in pallet makers - with a high concentration of new pallet manufacturing - losing revenue.

The Forestry Commission of Great Britain and the Forest Service of Northern Ireland, because of their responsibility to safeguard indigenous forests and woodlands and the requirement to provide information to inform forestry policy, need to understand how supply and demand is changing in the pallets and packaging industry in the UK.

In conjunction with environmental imperatives, there are important economic benefits that the pallets and packaging industry in the UK provides. In 2011, over a third of UK produced softwood was consumed by the pallets and packaging industry; consequently the value of the industry to the Forestry Commission and the Forest Service; to forest owners and managers, to harvesting companies and sawmillers, in economic terms, cannot be understated.

The pallets and packaging industry in 2011 and in the coming few years faces a number of competing pressures on its productive resource, its financial health, its commitment to help protect the forests supplying its raw material and the absolute necessity to provide its customers with the value and service demanded of it.

These issues, alongside the development of the industry - identifying the most important trends - are examined in this third Wood Packaging Study.

TIMCON and the Forestry Commission commissioned *timbertrends*, an independent analyst, to carry out this work during 2012.

Objectives of the Research:

To estimate the value and quantities of new pallets and packaging materials manufactured and repaired in the UK, leading to estimates of timber usage. This would involve providing:

1. Estimates of the value and quantity of
 - new pallet manufacture and repair in the UK
 - size of pallet
 - type (2-way/4-way)
 - heat treated (ISPM15)
2. Estimates of timber consumption by pallet and packaging manufacturers in the UK, including estimates of timber supply by country
3. Estimates of the productive capacity of ISPM15 heat treated and kiln dried pallet manufacture.
4. To investigate the differences between data supplied by the Office for National Statistics (ONS) and industry data with a view to reconciling these differences.

Scope of the Research:

The scope of the research involved engagement with manufacturers of pallets and packaging and pallet pool operators in the UK within TIMCON membership and Wood Packaging Material Marking Programme (WPMMP) members, less those already in TIMCON membership.

In order to investigate the differences between official statistics as supplied by the Office for National Statistics and that provided through industry sources, contact with ONS is designed to understand how differences occur and whether they can be reconciled.

Methodology:

The methodology adopted for this study involved questionnaires despatched to TIMCON and WPMMP members by e-mail and selected use of the telephone.

Two questionnaires were devised for contact with TIMCON and WPMMP members. A ten question questionnaire was despatched to TIMCON members and a shorter, less comprehensive questionnaire sent to WPMMP members.

Copies of these questionnaires can be found in Annex I of this report.

Measuring the supply of manufactured and repaired pallets and packaging in the UK required a careful and deliberate approach, because of the structure of the industry.

The market 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 and also 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 pallet pool operators rent pallets for use by customers.

Further detail of the programme of work and methodology used can be found in Annex II to this report.

Executive Summary

The pallets and packaging industry in the UK has experienced considerable change in the last few years and faces a number of difficult challenges in the period ahead.

The quantity of pallets manufactured in the UK has fallen substantially since 2007. In 2011, the quantity of newly manufactured pallets fell by 7% over 2010.

Industry turnover also fell in 2011, by over 5% - but would have fallen more had timber prices not continued to increase. Timber costs represent around 70% of turnover and with a further 3% rise in softwood prices in 2011 coupled with increases in energy and labour costs, the industry's cost base has continued to come under pressure.

At a time when quantities are down, turnover is lower and costs are increasing, the industry has witnessed changes in the way pallets are recovered and re-used, especially in food and drink distribution. A higher frequency of re-use, although supporting the environmental credentials of the industry, has reduced the quantities of pallets returned for repair in the last two years and this has contributed significantly to the decline of over 10% in the number of pallets repaired in 2011.

Longer service life through re-use has also resulted in a greater number of elements requiring replacement or repair which has increased the average amount of work involved in each repair and also the average usage of timber per repair. Despite more timber used per repair, the lower overall total of repairs in 2011 has contributed to the overall consumption of timber products by the pallets and packaging industry falling in 2011. Specifically in the pallets industry, softwood usage was estimated to have fallen by 4% in 2011.

There are other pressures on the pallets and packaging industry in the form of potential changes in timber supply and continued weak demand in pallet user markets as the UK struggles to achieve better economic growth.

The possibility also exists that greater quantities of heat treated and kiln dried timber for pallet making and repair will need to be supplied by sawmillers and this possible change in timber supply may be joined by the subsidised energy industry demanding more woody biomass. These changes, should they transpire, would place further pressure on timber supply and prices.

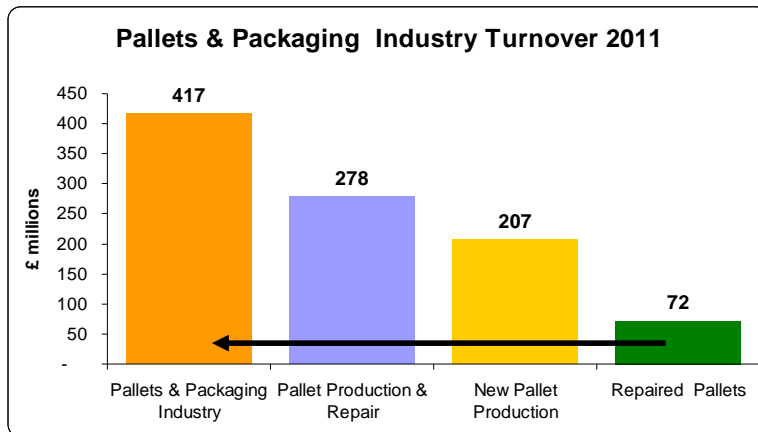
These challenges are further identified in this report along with data describing the changes that are taking place in the industry. The major changes are summarised below.

Pallets & Packaging Industry Turnover

Turnover of the pallets and packaging industry in 2011, comprising the production and repair of pallets, cases, boxes, crates, drums and other industrial packaging, was estimated to be £417 million. This was £13 million less than in 2010 - a fall of 3%.

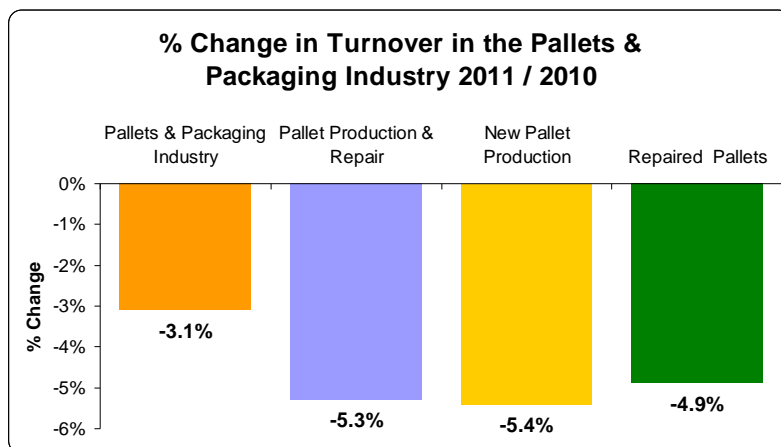
Turnover of pallet production and repair in 2011 was £278 million, a decrease of 5.3% over 2010. This 5.3% decrease was formed from a 5.4% fall in the value of newly manufactured pallets and a 4.9% fall in the turnover of repaired pallets.

The charts below summarise.



The value of repaired pallets of £72 million when added to the value of new pallet production of £207 million forms the total pallet turnover of £278 million which is included within the total pallets and packaging industry turnover of £417 million.

The change in 2011 for each category was as follows.

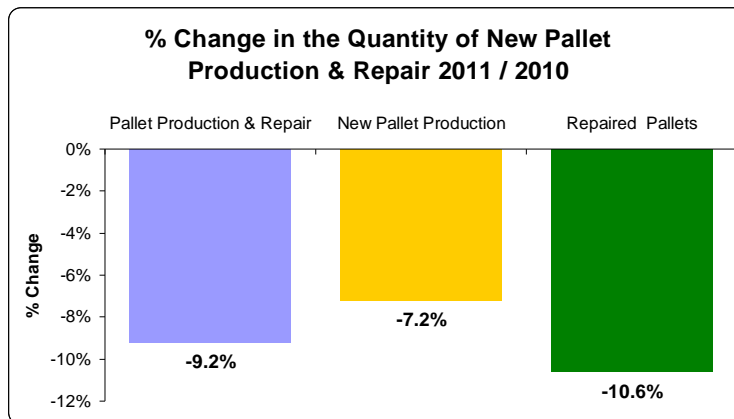
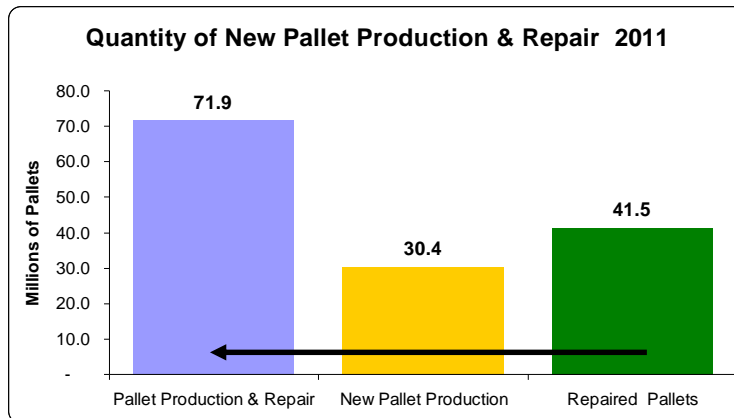


Quantity of Pallets Produced and Repaired

The quantity of pallets produced and repaired in 2011 fell by 9.2% to 71.9 million.

The quantity of newly manufactured pallets fell from 32.8 million in 2010 to 30.4 million in 2011.

The quantity of repaired pallets fell from 46.4 million in 2010 to 41.5 million in 2011. These changes are shown in the two following charts.



Pallets & Packaging Industry Employment

The pallets and packaging industry employed an estimated 4,390 people in 2011, a small reduction on the 4,412 employed in 2010.

The number employed in new pallet production fell from 1,653 in 2010 to 1,581 in 2011.

Pallets & Packaging Industry Timber Usage

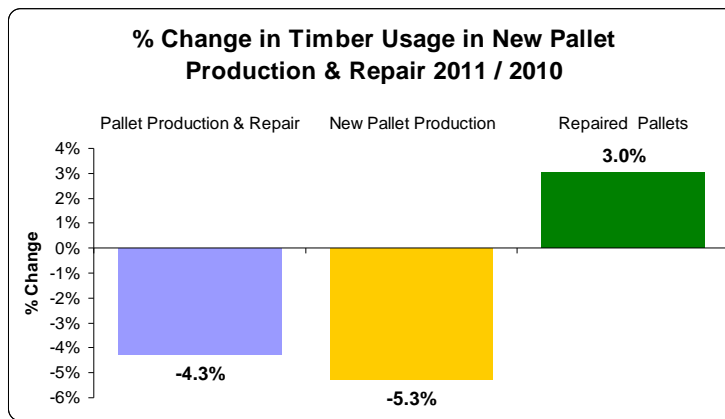
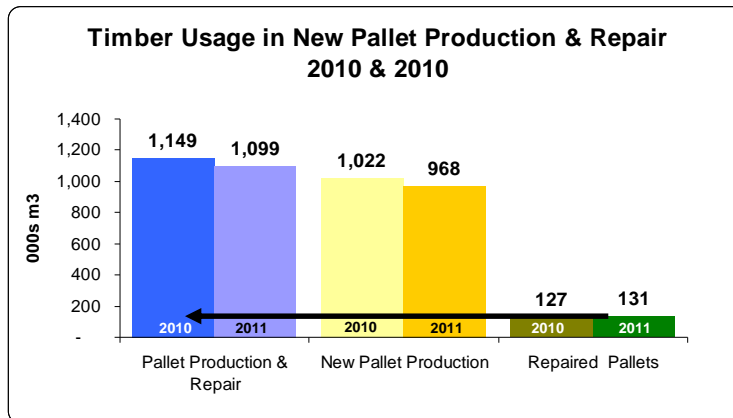
The volume of timber and wood products (sawn softwood, hardwood and panel products) used by the pallets and packaging industry, fell slightly from 1.57 million m³ in 2010 to 1.55 million m³ in 2011. This includes all pallets and packaging materials.

Timber Usage in Pallet Production & Repair

The volume of timber and wood products used solely in pallet production and repair fell in 2011 by 4.3% to 1.1 million m³.

A decrease of 5.3% in timber used for new pallet production to 0.968 million m³ was accompanied by a 3.0% increase in timber usage to 0.131 million m³ in pallet repair.

The charts below summarise.



Heat Treated Pallets

Heat treated pallets as a percentage of all newly manufactured pallets rose in 2011 to 16% from 11% in 2010. An estimated total of 10 million pallets were heat treated in 2011 - around 2.6 million more than in 2010 - as the total of all newly manufactured pallets declined by 2 million to 26.2 million. It cannot be confirmed through the work of this report, but it is possible that the increase in the quantity of heat treated pallets has been driven by the rising demand for kiln dried pallets. Heat treated pallets typically require 3 hours in a modern kiln while kiln drying takes up to 24 hours. By virtue of kiln drying, many pallets are also heat treated to the ISPM 15 phytosanitary standard.

There is a distinct possibility that within two to three years, all new pallet production and new timbers for repaired timber pallets will require to be heat treated, as directed by EU legislation. Should this transpire, it is estimated that pallet manufacturers will need to double existing heat treated output. Whilst this is a challenging target, time taken to heat treat is time taken away from kiln drying pallets, for which there is an increasing demand. Consequently, pallet manufacturers are faced with the competing pressures of supplying greater quantities of heat treated pallets whilst simultaneously satisfying the demand for kiln dried pallets.

Many pallet manufacturers without kilns, in order to comply with legislation, would need to rely on sawmillers to supply heat treated and kiln dried timber which in turn, would require sawmillers to invest in order to meet this increased demand.

Timber, able to supply this demand, may also need to be imported, depending on the supply of heat treated and kiln dried timber from UK sawmillers.

Findings:

The Pallets & Packaging Industry Turnover

The turnover from both newly manufactured and repaired pallets fell in 2011. Turnover for 2011 amounted to £278.2 million. This was 5.3% lower than the £293.7 million in 2010.

The turnover of **newly manufactured** pallets in the UK for 2011 amounted to £206.6 million in 2011, compared to £218.3 million in 2010. This was a decline of 5.4%.

For **repaired** pallets, turnover in 2011 was £71.6 million compared to £75.4 million in 2010, a decline of 4.9%.

This Wood Packaging Study, by virtue of requesting information from members of the Wood Packaging Members Marking Scheme, was able to provide estimates of the value of non-pallet packaging manufacturing in 2011 which was estimated to have been 1.6% higher than in 2010 at a value of £138.7 million. The destination of pallets and packaging is outside the scope of this study, however, it is possible that part of the increase in turnover of non-pallet, or industrial packaging, may have been due to better export performance in some markets.

The combined value of pallet manufacturing and repaired and non-pallet manufacturing in 2011 was therefore estimated to be £417.0 million, down by 3.1% from the 2010 value of £430.3 million.

Another measure of packaging and pallets activity in the UK is provided from ProdCom which is a comprehensive data series of production of PRODUcts of the European COMMunity and is a European Union (EU) wide survey. This series covers around 3,866 products classified to around 234 industries in manufacturing, but also in service, repair and distribution industries.

Companies involved in the annual ProdCom Inquiry supply sales data for the products they manufacture, as well as non-manufacturing income. Within Division 16 of ProdCom which is concerned with sales of wood products is a sub-division, No: 16241133 which measures sales of flat pallets and pallet collars of wood and also sub-division No: 16241135 which measures sales of box pallets and load boards of wood, excluding flat pallets.

According to the provisional ProdCom estimates for 2011, the total turnover for flat pallets produced in the UK was £277.5 million and with box pallets added, £287.5 million.

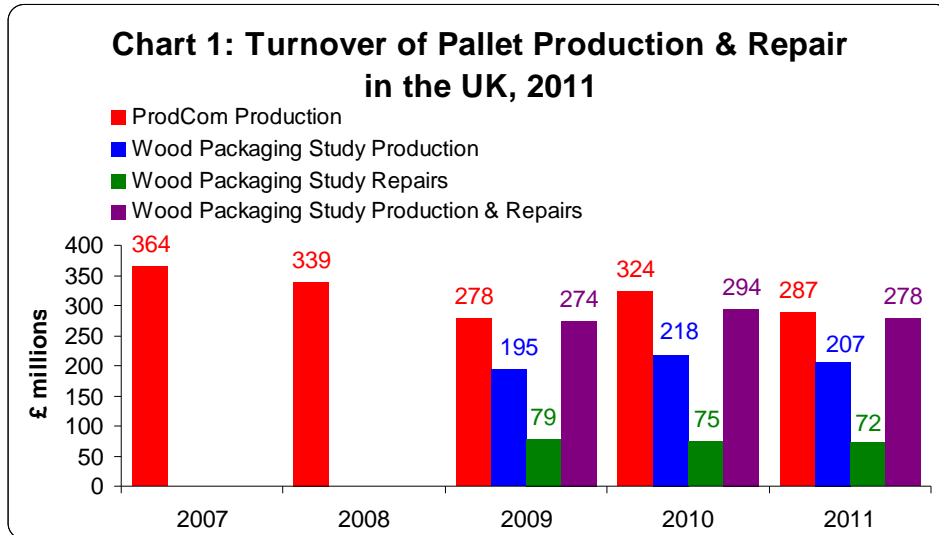
With non-pallet packaging, (cases, boxes, crates and cable drums, in addition to pallets, but not casks, tubs etc) added to pallets turnover, the 2011 Prodcom total was £393.8 million.

The total turnover derived from the Wood Packaging Study for packaging and pallets for 2011 - excluding re-used pallets - was £417 million, nearly 6% higher than the ProdCom total.

Remarkably, the ProdCom value for production of flat pallets for 2011 was different to the estimated turnover of pallet manufacturing and repair from the Wood Packaging Study by less than 0.1%.

With the ProdCom turnover value of box pallets added, the total ProdCom turnover for all pallets was £287.5 million, or 3.7% higher than the measure of all pallet activity from the Wood Packaging Study.

The value of pallet production in the UK as measured by ProdCom from 2007 to 2011 is shown in chart 1 below, alongside the turnover estimates from the three Wood Packaging Studies conducted since 2009. As indicated above, the ProdCom totals include sales of box pallets in addition to flat pallets.



The ProdCom data for Division 16 is gathered, analysed and published by the Office for National Statistics (ONS) and - according to ONS - is concerned only with wood packaging production. Previous dialogue with ONS also revealed that the turnover from pallet repairs would be classified to Division 33, which is a division dedicated to repair and maintenance.

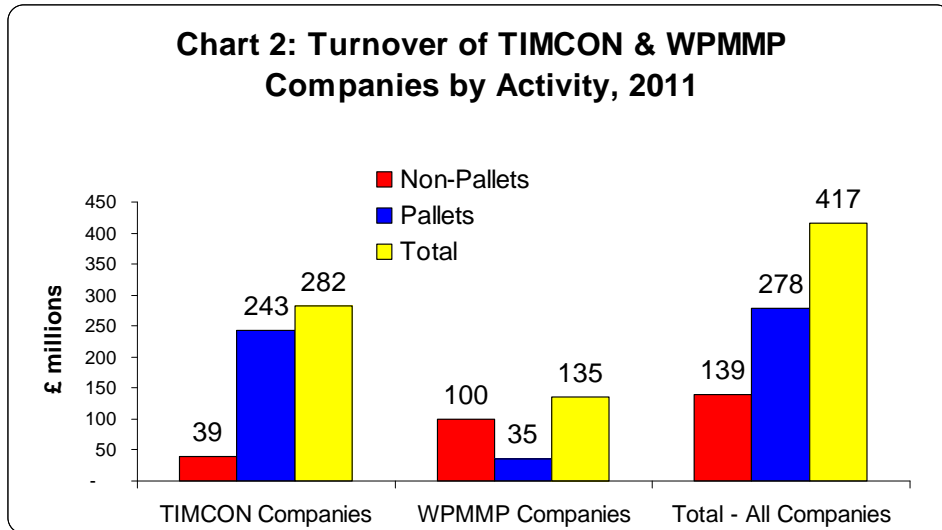
As shown in chart 1, the turnover value from the Wood Packaging Study of £278 million consists of both newly manufactured pallets (production) and repaired pallets (repaired and re-manufactured). Consequently, the difference between ProdCom turnover value of £277 million for flat pallets (£287 million in total), which purportedly only measures production, and the Wood Packaging Study production value of £207 million (not including repaired pallets) is £71 million. Therefore, the ProdCom value was 34% higher.

The further comparison of these two sources of information and a report on the progress of an investigation into the differences between the two sources can be found in the final section, Investigation into Pallets Data provided by ONS, of this report.

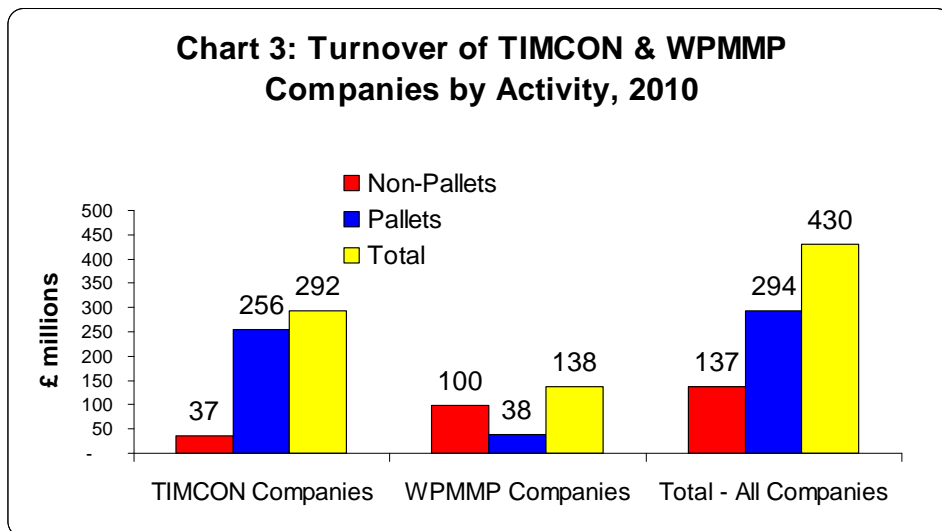
The turnover estimate for pallets of £278 million from the 2011 Wood Packaging Study includes estimates of the turnover of TIMCON member companies and those belonging to the Wood Packaging Material Marking Programme (WPMMP). Some members of the Wood Packaging Material Marking Programme manufacture pallets and many manufacture forms of packaging other than pallets. From this sector of the packaging market, estimates were derived for the turnover of other, non-pallet packaging.

The estimated turnover for all types of packaging from the Wood Packaging Study, as indicated above, was £417 million for 2011 broken down into TIMCON member companies' turnover of £278.2 million and the turnover of WPMMP companies, which was estimated to be £138.8 million. It should be noted that those companies within TIMCON membership that are also WPMMP members were excluded from the estimate for WPMMP companies turnover.

Chart 2 below shows the breakdown of different activity by TIMCON and WPMMP member companies.



For ease of comparison, the turnover of TIMCON and WPMMP members for 2010 is shown below in chart 3.



TIMCON member companies' turnover fell in 2011 by 3.7% to just under £282 million. TIMCON companies' pallet turnover was lower by £12.7 million or 5.0%, while TIMCON companies' non-pallet turnover rose by £2.0 million, or 5.4%.

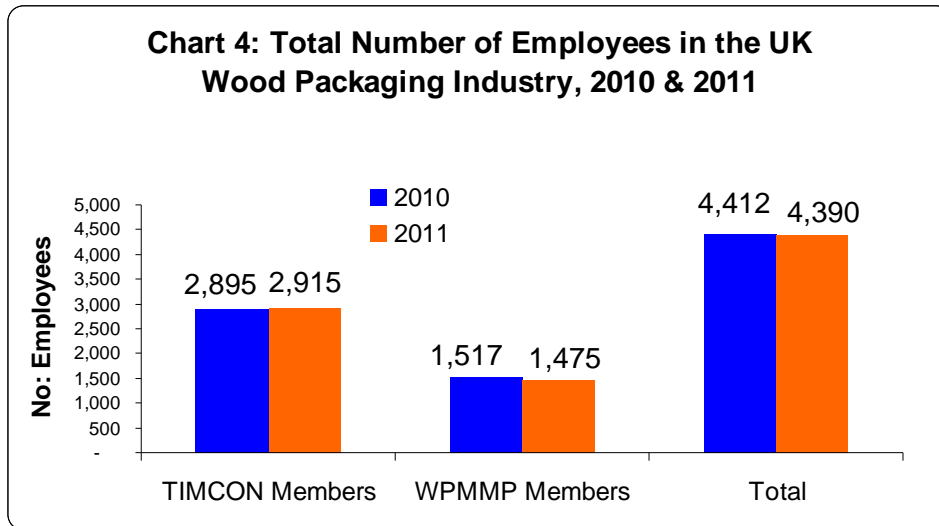
The turnover of WPMMP member companies was estimated to have also fallen in 2011 by just over £2.6 million, a decline of 1.9%.

Combining the sales of pallets and other packaging materials (non-pallets) the total packaging and pallets industry turnover in 2011 was £417 million, down by around £13 million, a fall of 3.1%.

Industry Employment

The number of people employed in the packaging and pallets industry is estimated to have fallen slightly in 2011.

The number of employees engaged by TIMCON members companies at 2,915 is a marginal increase over 2010 and those employed by WPMMP members companies has fallen to 1,475.



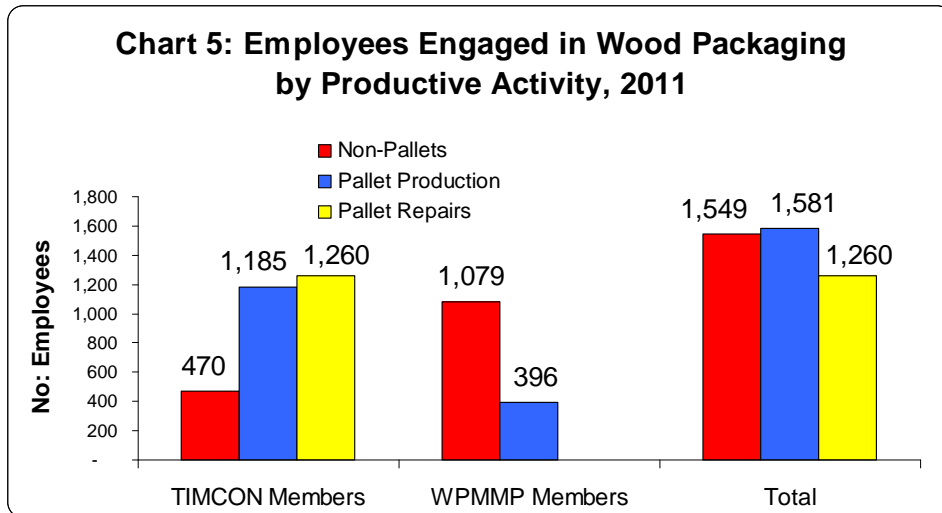
Although the number of TIMCON member company employees is virtually the same as in 2010, the composition by activity has changed between 2011 and 2010 and this can be viewed in chart 5 below.

TIMCON member companies continue to account for nearly two-thirds of all employees in the packaging and pallet industry in the UK, which compares with the proportion of industry turnover accounted for by TIMCON members companies which was exactly two-thirds of turnover the total pallets and packaging industry in 2011.

The measure of industry-wide average turnover per employee in 2011 of nearly £95,000 is lower than the revised measure in 2010 of nearly £97,500 per employee by 2.6%.

A breakdown of employment by activity by TIMCON members companies and WPMMP companies reveals the different types of activity that employees were engaged upon in 2011.

Chart 5 below identifies this breakdown of employment for 2011.



The numbers employed in all new pallet production, at 1,581 is 4.4% lower than the 1,653 in 2010. Within this total, TIMCON companies employed 1,185 people which represented 73% of all employment in pallet production.

TIMCON companies account for virtually all employment in pallet repairs. The estimated 1,260 employees engaged in this activity is slightly higher (+ 3.5%) than the 1,217 estimated to have been employed in 2010.

A small increase in numbers employed in the manufacturing of non-pallets by TIMCON companies, to 470 from 465 in 2010 took place in 2011. The number of employees engaged in non-pallet manufacturing (the manufacturing of wooden cases, drums etc.) by WPMMP companies in 2011 of 1,079 was virtually the same as in 2010.

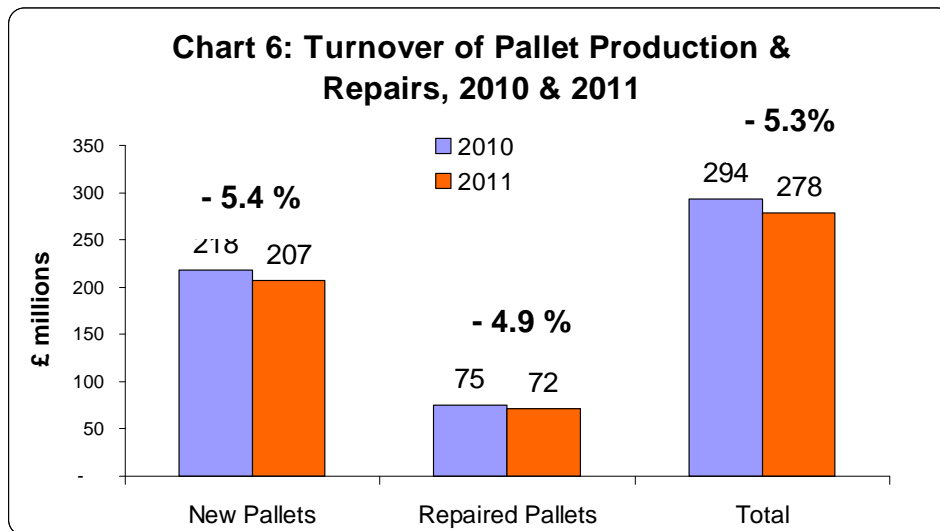
Pallet Production and Repair Values & Volumes

As shown in chart 2 earlier in this report, the turnover of pallet production in the UK in 2011 was £278 million.

It is estimated that £207 million of the £278 million was accounted for by newly manufactured pallets (£218 million in 2010) and nearly £72 million by repaired pallets (£75 million in 2010).

The reduction in turnover of both newly manufactured and repaired pallets in 2011 of approximately £17 million from £294 million in 2010 was 5.3%.

The values and percentage change in newly manufactured and repaired pallets are shown in chart 6 below.

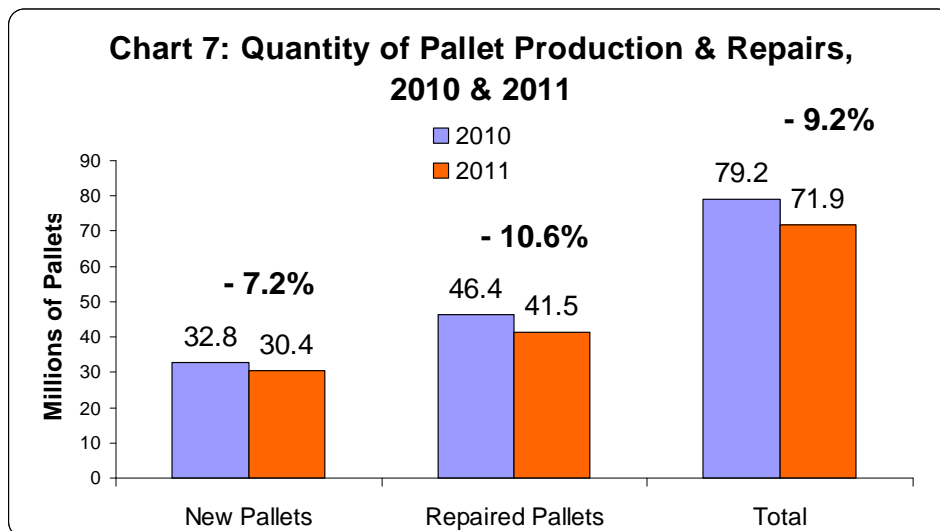


Despite a slightly greater reduction in value, newly manufactured pallets continued to account for 74% of all pallet productive activity.

The reduction in value of the pallets industry in 2011 was driven by reductions in volume and not reductions in price.

In 2011, pallet manufacturers produced a little over 30 million newly manufactured pallets compared to nearly 33 million in 2010. This 7.2% reduction in the quantity of new pallets was overshadowed however by a 10.6% fall in the number of repaired pallets. In 2011, nearly 41.5 million pallets were estimated to have been repaired compared to 46.4 million in 2010.

These changes by quantities are shown in chart 7 below.



Proportionately, newly manufactured pallets accounted for 42% of total productive activity by quantity and repaired pallets accounted for 58% of the total in 2011.

The trend of lower usage and production of newly manufactured pallets has been present since 2007 and with production at a level of around 30 million in 2011 it is probable that this is the lowest quantity of newly manufactured pallets produced this century.

In contrast, more repaired pallets have been placed onto the market over the last few years as pallet buyers and users of pallet pools have attempted to reduce costs through the greater utilisation of less expensive, repaired pallets.

The trend of fewer new pallets and more repaired came to an end in 2011 however.

In 2011, the UK was heading for lower economic growth, with the prospect of a double-dip recession by the end of 2011 or early 2012; the consequence of which was lower economic activity and less demand for many goods and services. This transferred through to lower demand for pallets.

Therefore, the combined effect of lower demand and the desire of pallet users to reduce costs has curtailed pallet production.

There is a further factor in the decline of pallet activity, especially pallet repairs.

Over the last two years, a change in the practice of pallet usage has resulted in fewer repairs of pallets taking place.

A practice that is becoming more prevalent, especially in the fast moving consumer goods markets, is agreement between companies and pallet providers to permit greater re-use of pallets. In this practice, users re-use pallets for onward distribution of goods instead of returning used pallets to the pallet provider for inspection and either re-use, repair or scrapping.

This reduction in the incidence of collection by pallet providers and the subsequent greater re-use of previously used pallets has resulted in a lower number of repairs.

The benefit for users and pallet providers is the ability to reduce costs - costs in pallet usage and costs of pallet repairs.

The disadvantage of this practice however is an increase in the extent of repairs. Many of the pallets involved in these recovery arrangements, once returned to the pallet provider, require more replacement elements than pallet repairs for pallets not involved in such arrangements.

Whilst these recovery practices have resulted in fewer repairs, the amount of work involved in repair and the incidence of pallet scrapping has increased.

Consequently, the fall in the number of pallets produced and repaired in 2011 can be attributed to a continuing pressure on pallet usage costs, on continuing low levels of demand for goods and services (pallets) and a change in the practice of pallet recovery in selected areas.

All of these pressures act upon the pallets industry's desire to strike a balance between good quality and service life, value for money, environmental responsibility and supply for end-life use, such as feedstock for chipboard manufacturing. In 2011, this balance became increasingly difficult to achieve.

Estimates of Wood Utilisation in Pallet Production and Repairs

In the production of newly manufactured pallets, timber usage (softwood, hardwood and panel products) was estimated to have been 968,000m³ in 2011 (1,022,000 m³ in 2010) and for repaired pallets, timber usage was 131,000m³ (126,000m³ in 2010).

Timber usage continues to be heavily orientated towards new manufacture, accounting for 88% of all timber products used with the remaining 12% used in repairs.

As noted in the previous section of this report, more repaired pallets are placed onto the market than newly manufactured (approximately a third more), yet the timber used in pallet repairs is around a tenth of that used in new pallet production.

This is confirmed when viewing the average usage data for 2011 where the timber used in a new pallet at 0.0314m³ is substantially higher than the average usage of 0.0032m³ in a repaired pallet.

A somewhat paradoxical increase in the volume of timber used in repairs in 2011 to 131,000m³ compared to 126,000m³ in 2010, as shown above, was accompanied by a reduction in the number of pallets repaired, from 46.4 million pallets in 2010 to 41.5 million in 2011.

This had the effect of raising the average usage per repaired pallet in 2011 to 0.0032m³ as reported above, from 0.0027m³ in 2010.

This 15% increase in average usage per repaired pallet is most probably due to the relatively new practice of pallet recovery referred to in the previous section of this report.

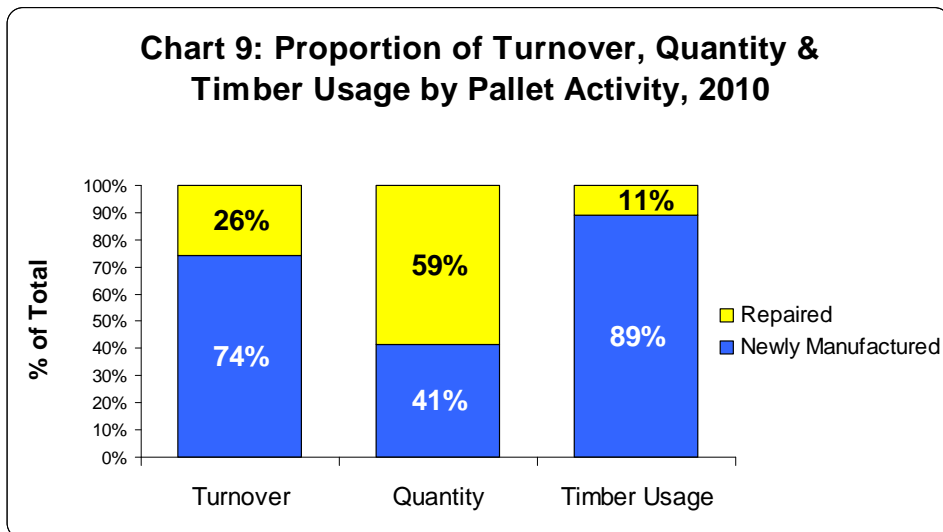
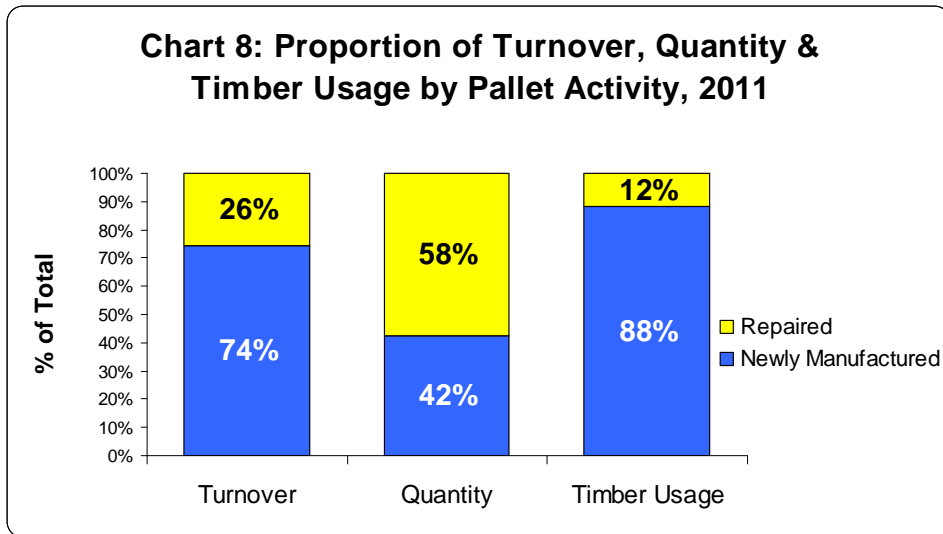
There are other pressures involved in fewer new pallets being produced compared to the greater incidence of repairs. The most notable is the cost of wood which accounts for a large proportion of pallet makers' costs.

Average import prices¹ for softwood in 2011 rose by 3% and this followed a 19% increase in 2010. Prices of UK supplied softwood tend to follow the price movements of imported softwood and with a high proportion of UK produced softwood used by pallet manufacturers, it is highly likely that the cost of timber for pallet manufacturers will have increased over the last two years. Typically, timber comprises 70% of a pallet maker's revenue, therefore timber price rises that cannot be passed forward to customers exert a depressing influence on profitability.

Price pressures have been another factor in the higher placement of repaired pallets onto the market, as substantially less timber is used in repairs than in newly manufactured pallets. Typically, timber consumption in repaired pallets is less than 10% of that used in new pallet production.

The differences in timber usage, alongside the proportions of newly manufactured and repaired pallets measured by industry turnover and quantities for 2011 and 2010 are shown below in charts 8 and 9 below.

¹ Derived from HM Revenue & Customs Trade Statistics



The very different characteristics between new and repaired pallets are clearly demonstrated in charts 8 and 9.

New pallet production accounted for three quarters (74%) of all pallet turnover in 2011.

Repaired pallets accounted for around three fifths (58%) of all productive activity in 2011.

Repaired pallets accounted for only around a tenth (12%) of timber used in 2011.

As confirmed by comparing charts 8 and 9, little change in these characteristics took place in 2011.

Turnover, Quantities & Timber Usage of Pallet Production and Repair

The estimates of turnover, the quantities produced and the volumes of timber products consumed by the pallets and packaging industry, as shown in the charts of the previous section of this report, were derived from a number of sources. A survey was conducted among TIMCON and WPMMP member companies in 2012 to gather data on the year 2011; data from the TIMCON membership database were also used and individual contact with pallet manufacturers and pool operators to gauge activity levels has informed this report. This enabled estimates to be made of productive activity in the pallets market for 2011 and 2010 and these are provided below in tabular form.

Table 1: Pallet Turnover, Quantity and Timber Usage, 2010 & 2011

	Pallet Turnover - £000s		Pallet Quantities - 000s		Timber Usage - 000m3	
	2010	2011	2010	2011	2010	2011
WPMMP Pallet Production	37,015	34,361	4,698	4,321	157	150
TIMCON Pallet Production	181,311	172,246	28,062	26,075	865	818
Total Pallet Production	218,327	206,607	32,760	30,396	1,022	968
TIMCON & WPMMP Pallet Repairs	75,351	71,628	46,394	41,478	127	131
All Pallets Manufactured & Repaired	293,678	278,235	79,155	71,873	1,149	1,099

The changes in each type of activity between 2011 and 2010 shown in table 1 above are quantified in table 2 below.

Table 2: Pallet Turnover, Quantity and Timber Usage, Percentage Change 2010 & 2011

	Pallet Turnover - % 2011/2010	Pallet Quantities - % 2011/2010	Timber Usage - % 2011/2010
WPMMP Pallet Production	-7.2%	-8.0%	-4.8%
TIMCON Pallet Production	-5.0%	-7.1%	-5.4%
Total Pallet Production	-5.4%	-7.2%	-5.3%
TIMCON & WPMMP Pallet Repairs	-4.9%	-10.6%	3.0%
All Pallets Manufactured & Repaired	-5.3%	-9.2%	-4.3%

From the data in table 1, it is possible to derive average values and usages per activity and identify the percentage changes that have occurred between 2011 and 2010. These are shown in table 3 below.

Table 3: Pallet Values and Material Usage and Percentage Change 2010 & 2011

	£/Pallet		% Change	m3/Pallet		% Change
	2010	2011		2010	2011	
WPMMP Pallet Production	7.88	7.95	0.9%	0.0335	0.0347	3.6%
TIMCON Pallet Production	6.46	6.61	2.2%	0.0308	0.0314	1.8%
Total Pallet Production	6.66	6.80	2.0%	0.0312	0.0319	2.1%
TIMCON & WPMMP Pallet Repairs	1.62	1.73	6.3%	0.0027	0.0032	15.2%
All Pallets Manufactured & Repaired	3.71	3.87	4.3%	0.0145	0.0153	5.4%

Reviewing the data from each of the three tables above provides the evidence of how the industry performed in 2011 compared to 2010.

The turnover decline in 2011 of 5.3% (Table 2) was derived from the fall from £293.7 million in 2010 to £278.2 million in 2011 (Table 1) which was driven by the drop in volume of 9.2% (Table 2) that resulted from the fall from 79.2 million pallets in 2010 to 71.9 million in 2011 (Table 1).

Had there not been a rise in the average values obtained in 2011 of 4.3% (Table 3), the decrease in turnover would have been much greater. Interestingly, in order to compensate

for the lower quantities produced and repaired in 2011, an average price of £4.08 (as opposed to £3.87) for all pallets manufactured and repaired would have been needed, which would have necessitated an average (across-the-board) price increase of just over 10%.

Pallet Sizes

As in previous Wood Packaging Studies, information was sought on the quantity of manufactured and repaired pallets of the two most common sizes, 1000mm x 1200mm or 1200mm x 1000mm and 800mm x 1200mm.

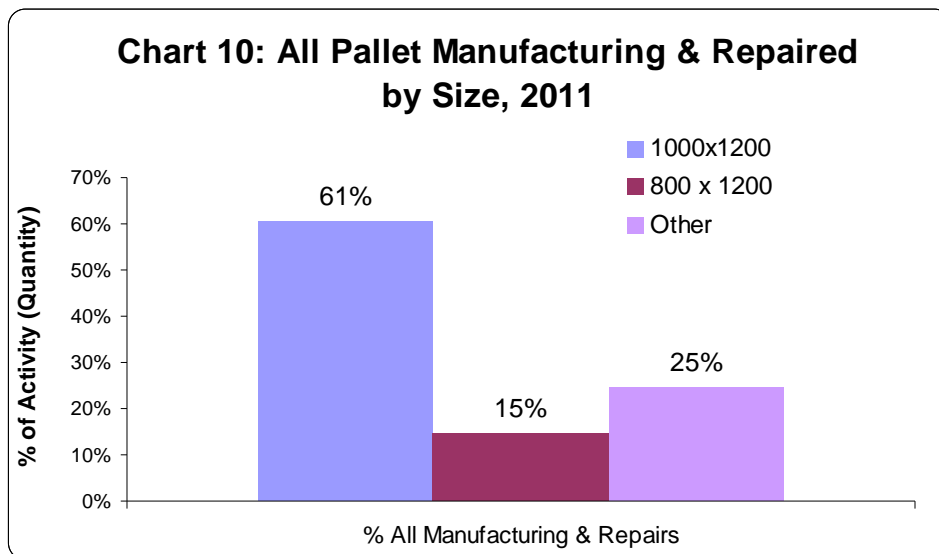
Not all respondents provided data on pallet sizes, therefore the findings presented here are potentially less reliable than some other data provided in this report. Nevertheless, there is a consistency of response between the surveys conducted for 2011 and previously.

Of the estimated 71.8 million pallets manufactured and repaired in 2011, a total of 43.7 million pallets (61%) were of the 1000mm x 1200mm size compared to nearly 51 million (65%) in 2010.

Approximately 11.5 million pallets of the 800mm x 1200mm size were manufactured and repaired in 2011, which represented 15% of the total. This compared to 12.5 million in 2010 which represented 16% of the 2010 total.

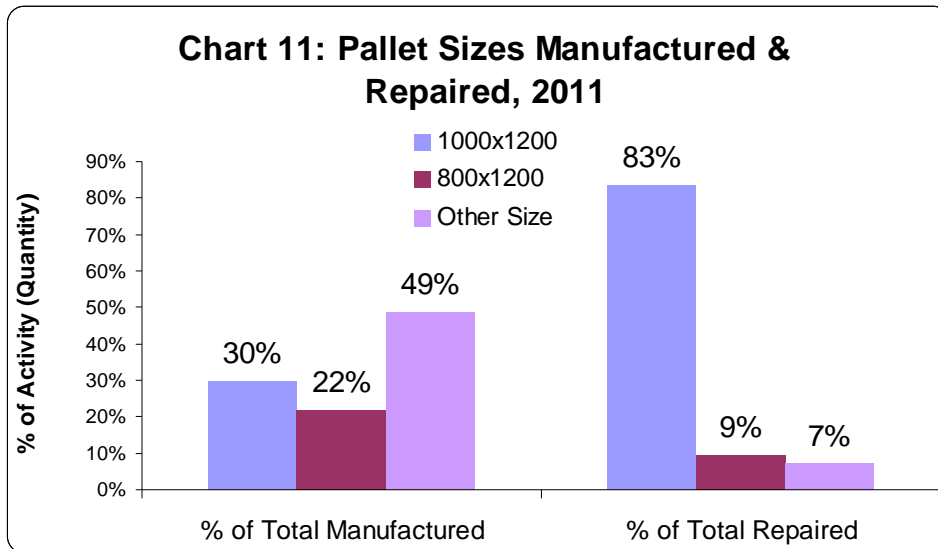
The quantity of all other pallet sizes - other than sizes 1000mm x 1200mm and 800mm x 1200mm - increased to 17.7 million in 2011 (25%) from over 15.5 million (20%) in 2010.

Hence, there has been a slight shift away from 'traditional' pallet sizes.



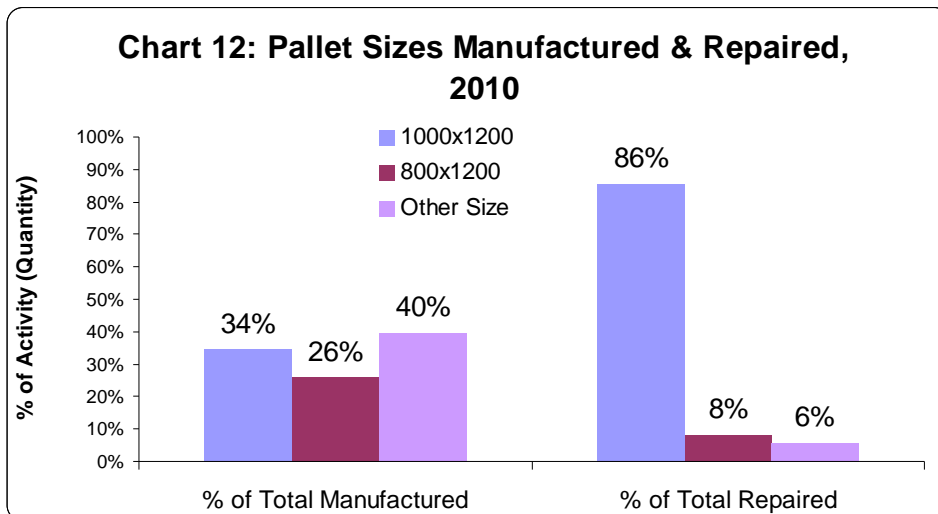
It should be reiterated however, that there is a potential for error within these estimates and the absolute numbers should be viewed with a degree of caution.

Within these totals, differences in the size of pallets by newly manufactured and repaired pallets were noted and are presented in chart 11 below with comparative results for 2010 shown in chart 12.



In the manufacture of new pallets, standard sized pallets of 1000mm x 1200mm and 800mm x 1200mm (combined) accounted for 52% of all new pallets, compared with 60% in 2010.

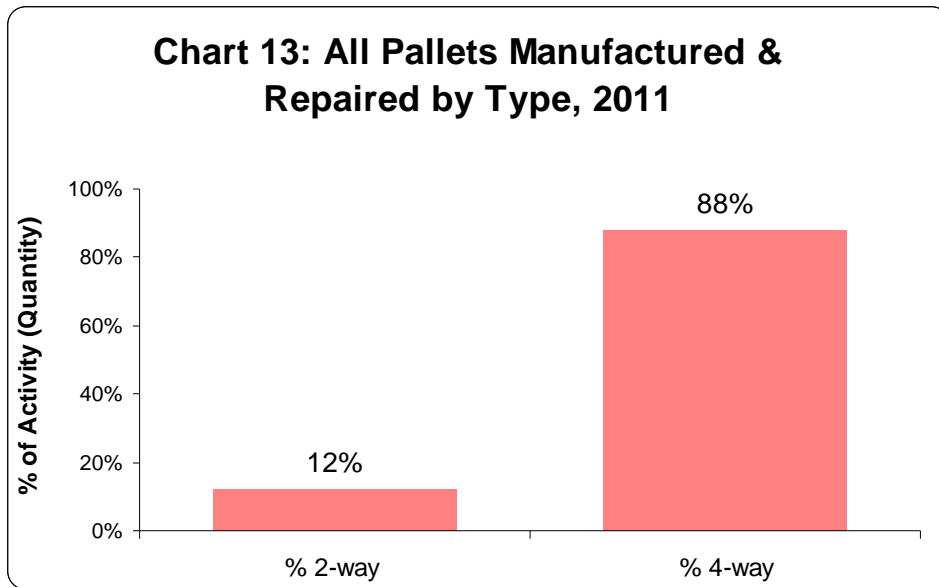
The great majority of repaired pallets were of the 1000mm x 1200mm size, with 83% of the total of all repaired pallets of this size.



Pallet Types

The great majority of pallets manufactured and repaired in the UK are configured for 2-way or 4-way entry for loading equipment.

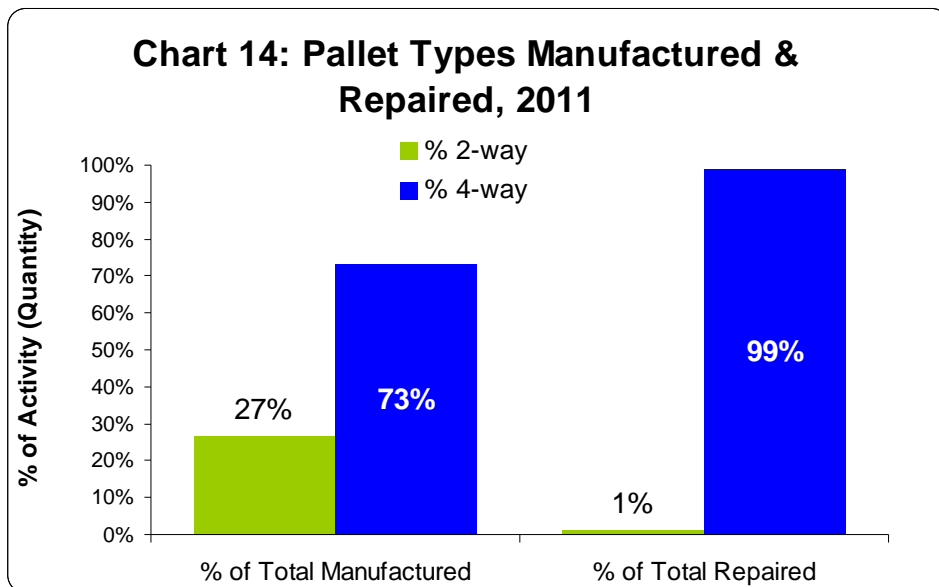
It was estimated that no change took place in the mix of the two types in 2011 with 12% of all manufactured and repaired pallets accounted for by the 2-way variety, the same as for the revised data in 2010. The comparison between 2-way and 4-way pallet production and repairs is shown in chart 13 below.



Nearly 72 million pallets were manufactured and repaired in 2011 and around 8.5 million were of the 2-way type compared to 10 million in 2010 and over 63 million pallets were of the 4-way type in 2011 compared to 69 million in 2010.

Despite the reduction in quantities in 2011, the proportion of pallet types by entry - as shown in chart 13 above - remained as in 2010, but there were differences in the mix of pallet types by entry when reviewing newly manufactured and repaired pallet activity.

These differences in pallet type by productive activity are shown in chart 14 below.



Timber Consumption & Source of Supply

The pallets and packaging industry in the UK is a significant user of timber and wood products. In the Forestry Commission's publication, Forestry Statistics 2012, for 2011, the pallets and packaging industry was recognised as one of the leading user markets for softwood, accounting for around a third of the output of the larger sawmills in the UK.

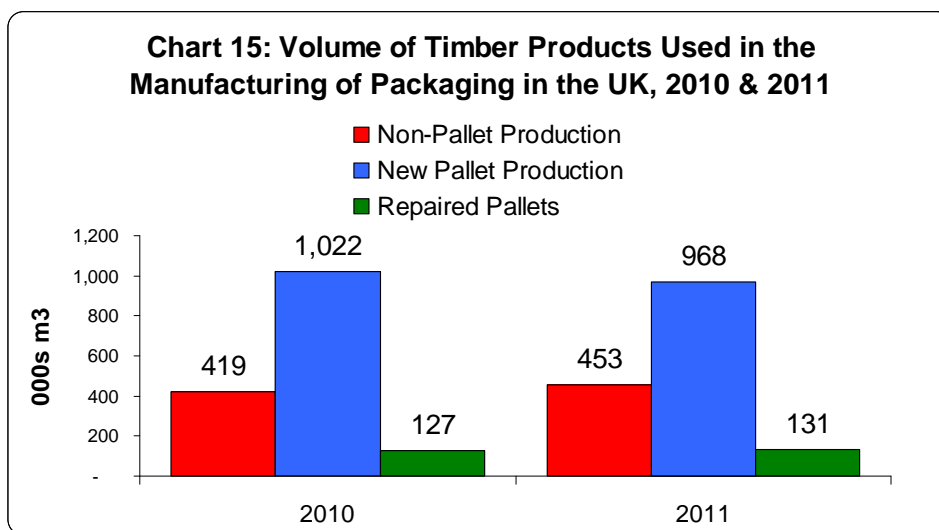
Once the supply of softwood by smaller sawmills and imported softwood consumed by pallet manufacturers is included, the total consumption of softwood by the pallets industry in the UK amounts to nearly 1million m³.

There are timber products other than softwood used in the manufacturing and repair of pallets and with the addition of these other products, mostly hardwood (e.g. aspen, alder, birch mainly from the Baltic States), plywood (mostly for non-pallet packaging) and composite pallet blocks, the volume of all wood products consumed by the pallets industry in 2011 amounted to 1.1 million m³.

Timber and wood products are also consumed by manufacturers of other packaging materials, such as boxes, cases and drums.

This non-pallet activity also uses much timber and adding these volumes to the volumes consumed by the pallets industry, the total of all timber and wood products consumed by the combined pallets and packaging industry was a little over 1.5 million m³ in 2011.

This volume is identified by activity type and shown in chart 15 below with comparative data for 2010.



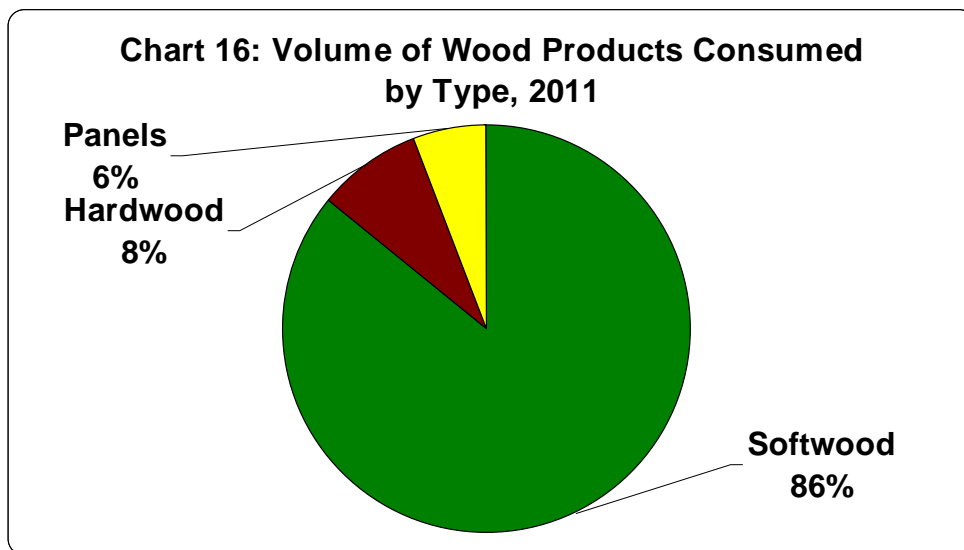
Consumption of timber and wood products fell by just 1% in 2011, but as shown in chart 15, more timber was used in pallet repairs and non-pallet packaging whilst less was used in new pallet production.

The drivers behind the 5% fall in timber used in new pallet making have been reviewed previously, in the section of this report (page 14) which presented estimates of the turnover and quantities of newly manufactured and repaired pallets; as were the reasons for the 3% rise in timber consumed in pallet repairs described in chart 15 above.

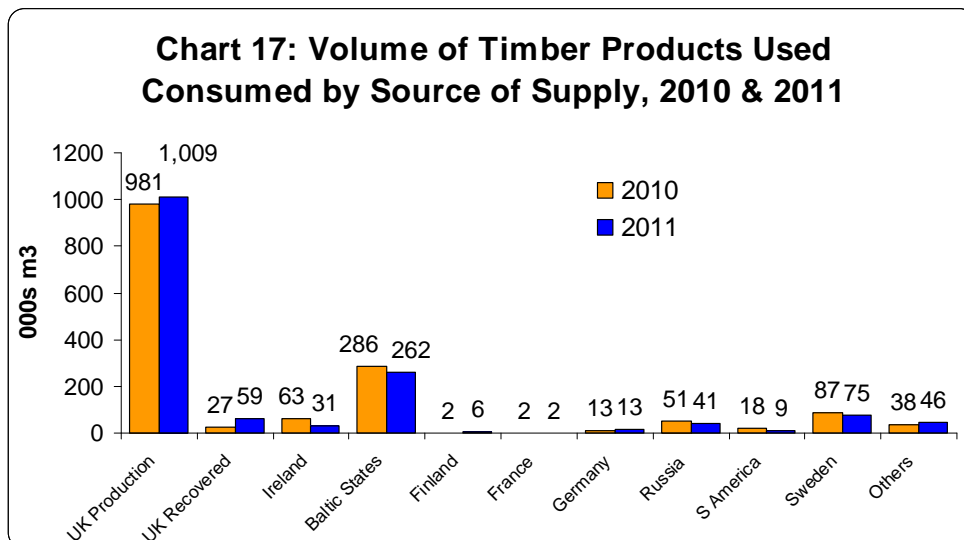
The 54,000m³ decline in timber used in new pallet manufacturing in 2011 has resulted in a fall in the share of timber used for this purpose to 62%, from 65% in 2010.

Softwood remains the most popular timber product used in the pallets and packaging industry, accounting for 86% of all timber and wood products consumed in 2011. Hardwood volumes, mostly from the Baltic States, were slightly lower in 2011 and accounted for 8% of all timber consumed in 2011, down from the revised 9% in 2010.

The percentage breakdown of the 1.55 million m³ of timber products consumed in 2011 is shown in chart 16.



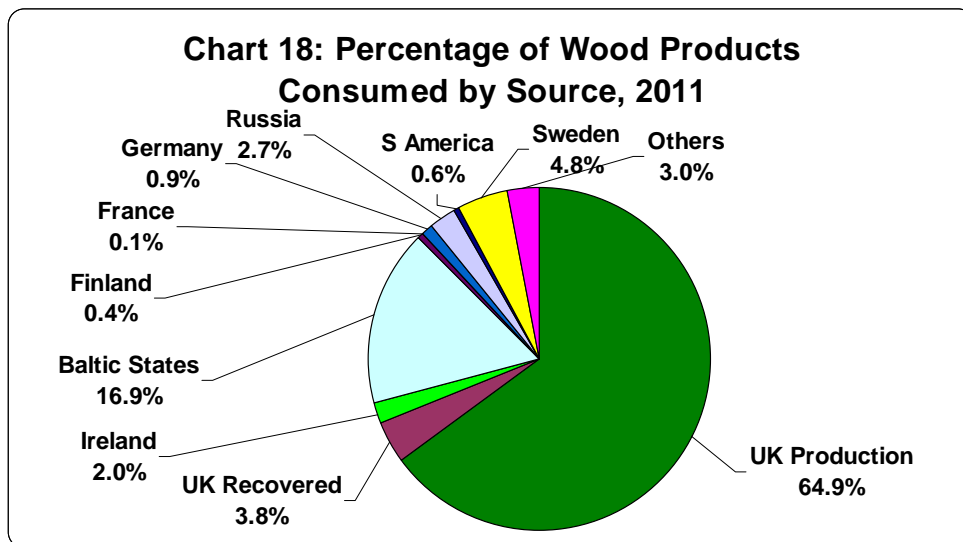
The source of supply of timber products has changed in 2011, with UK sourced material winning market share from imported timber. The changes in volume by source of supply are described in chart 17 below.



Around 3% more UK produced timber was used by the pallets and packaging industry in 2011 and the usage of recovered timber was also higher. These two sources of supply accounted for 69% of all supply in 2011. This compares with 64% in 2010.

A collection of other countries supply timber into the pallets and packaging market with the Baltic States, led by Latvia, supplying more than all the other countries combined. Sweden and Russia supply mainly to the non-pallets market and the only other supplying country of note is Ireland. It should be noted that revisions to the volumes exported from Ireland for 2010 are shown in chart 17.

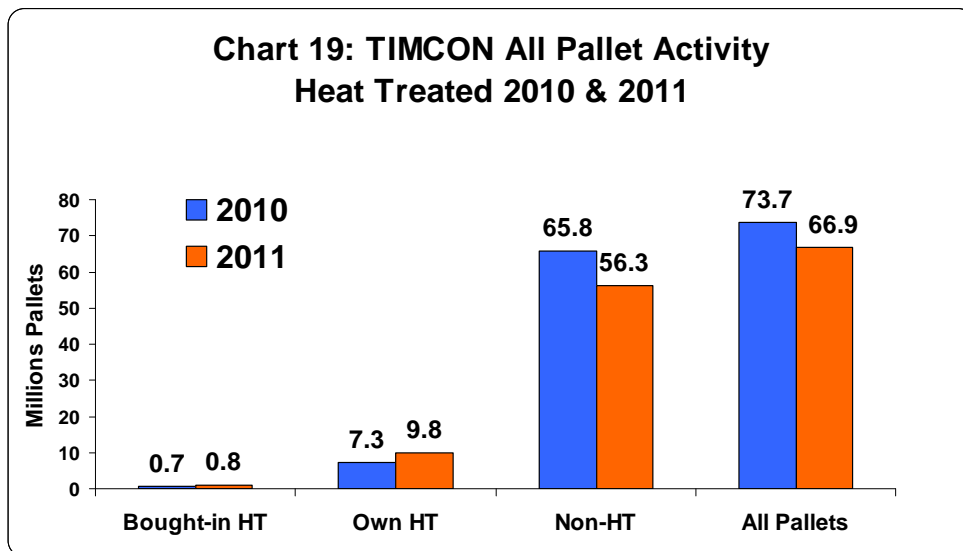
The breakdown of supply in percentage terms from all main sources is shown in chart 18.



Heat Treatment and Kiln Drying Capacity in the UK

This Wood Packaging Study has quantified the supply of heat treated pallets in the UK.

Currently, relatively low levels of heat treated pallets and packaging in the UK are supplied, as reflected by the small number of heat treated pallets manufactured and repaired in 2011 and 2010 by TIMCON member companies, as shown in chart 19 below.

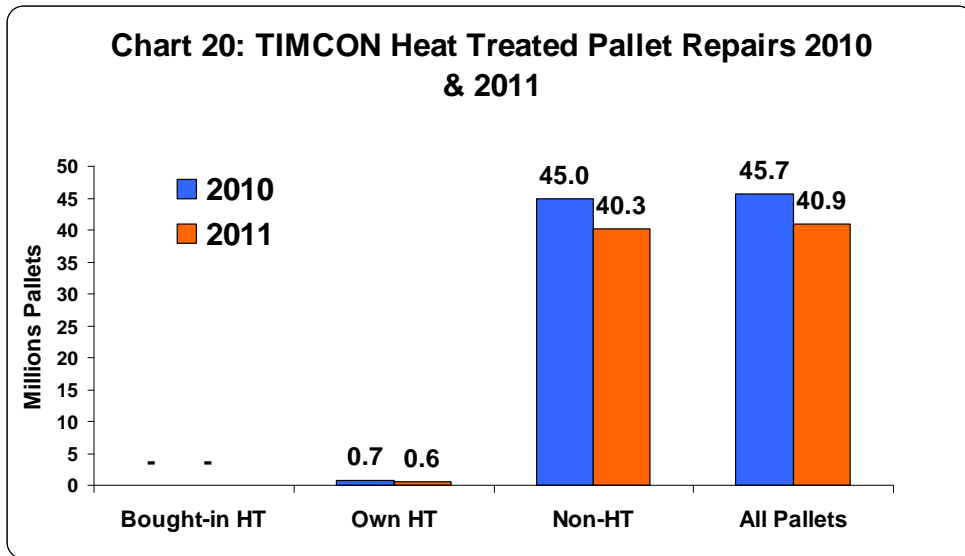


The addition of bought-in heat treated timbers with TIMCON companies own heat treated output resulted in 10.6 million heat treated pallets in 2011. This represented around 16% of all manufacturing and repair by TIMCON companies in 2011.

This relatively small percentage of heat treated pallets was nevertheless a substantial increase over 2010 where the percentage of heat treated pallets was around 11% of the (larger) total.

It is believed that one of the drivers of increased quantities of heat treated pallet production is due to the increasing demand from pallet buyers for kiln dried pallets. By virtue of kiln drying, many pallets are also heat treated.

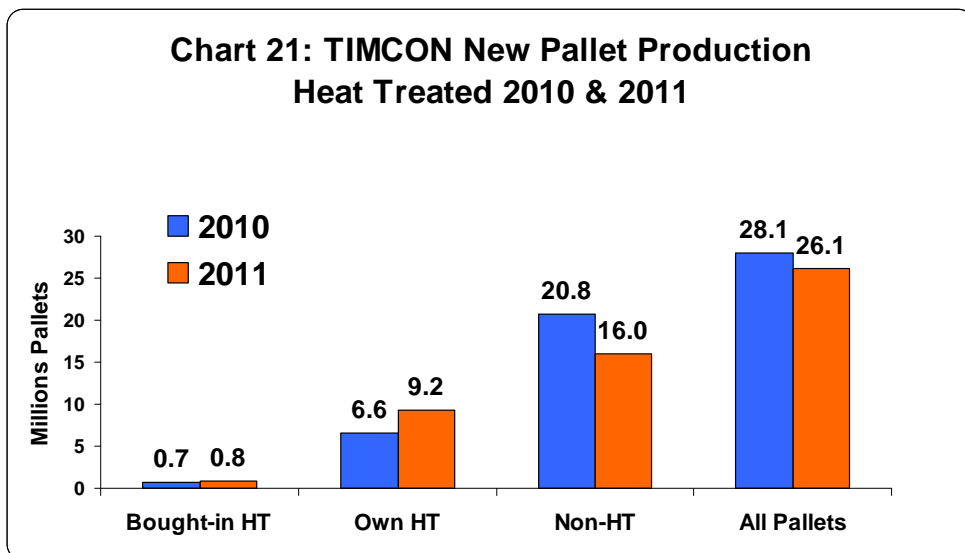
The totals in chart 19 are derived from the combined quantity of heat treated newly manufactured and repaired pallets. However, only a very small proportion of repaired pallets receive any heat treatment before returning to use and this is confirmed in chart 20 below.



The possibility of EU regulation, designed to help eradicate the spread of pest infestation in pallets, would have a main focus on newly manufactured pallets, therefore it has been necessary to understand the extent to which new production is currently heat treated.

This specific analysis for newly manufactured pallets reveals that the percentage of newly manufactured heat treated pallets in 2011 accounted for 35% of all new production by TIMCON members, rising from the 2010 percentage of 24%. The extent to which kiln drying was responsible for this percentage is not known, but should further Wood Packaging Studies be conducted, an investigation into kiln drying would be of paramount importance.

The extent to which new production was heat treated in 2011 with the comparison to 2010, is shown in chart 21 below.



Despite the total number of newly manufactured pallets produced by TIMCON members reducing in 2011 by nearly 2 million, the number of heat treated pallets rose by 2.6 million.

The great majority of heat treated pallets were heat treated by TIMCON manufacturers in-house and it is significant that the quantity of heat treated pallets produced with bought-in treated timber was roughly the same as in 2010. The UK experience is in line with Europe where there is also a much greater incidence of heat treatment in-house than pallet manufacturing using bought-in heat treated components.

Around a third of the TIMCON membership possess kilns. It is estimated that this third - being mostly larger companies - accounts for around 73% of the output of newly manufactured pallets from the TIMCON membership. Therefore, the heat treated output from kiln operating TIMCON companies accounts for around 50% of this group's output of newly manufactured pallets.

The ability to improve upon this percentage is unclear, especially, as described previously, the market is demanding more kiln dried pallets which reduces the capacity to heat treat pallets and packaging.

This market trend towards kiln dried pallets, exacerbating the capacity shortfall for heat treated pallets in the industry, provides pallet makers with the dilemma of wanting to react to market demand for kiln dried pallets and simultaneously needing to respond to the growing requirement to manufacture heat treated pallets to ISPM 15.

In round terms, TIMCON manufacturers with kilns supplied 9.2 million new heat treated pallets in 2011, from a total of 19.1 million produced. The total supply of new pallets from TIMCON companies in 2011 was 26.1 million, therefore, even if TIMCON manufacturers with kilns could supply 100% of their output heat treated, this would leave a further 7 million pallets (at current rates of demand) to be manufactured with bought-in heat treated timbers.

The clear message from this Wood Packaging Study - following the increase in supply of heat treated and kiln dried pallets and packaging over the last two years and the likely further increases over the next two years - is that the pallets and packaging industry is responding to the increasing demands placed upon it.

Investigation into Pallets Data provided by ONS

The differences between ProdCom data, as supplied by ONS, and information in the Wood Packaging Studies over industry turnover totals and quantities require clarification.

In turnover terms, the ProdCom estimates for pallets over the last three years have differed from the turnover estimates from the Wood Packaging Study by 1.4% in 2009, 10.1% in 2010 and 3.6% in 2011.

It would appear that in turnover terms the differences between ProdCom and Wood Packaging Study estimates have, at times, been within acceptable limits. This is not unexpected as ProdCom derive their estimates from TIMCON members and others and the Wood Packaging Study researches a very similar sample.

However, there are differences between the two sets of data in terms of units produced and these differences become amplified when strict definitions to the data are applied.

In total, ProdCom estimate that 51.2 million pallets were produced in the UK in 2011. The total output from the Wood Packaging Study quantifies the number of pallets produced and repaired in 2011 at 71.9 million, a difference which reveals that the Wood Packaging Study estimate is 40% higher and the difference too large to be explained by statistical error.

However, if the strict definition of production as used by ONS is employed within the Wood Packaging Study, production would be measured at 30.4 million new pallets in 2011. This would produce a difference between ProdCom and the Wood Packaging Study of 40% once again, but in this case, the ProdCom estimate is 40% higher.

The difference in interpretation over what constitutes production appears to lie at the heart of the differences between the two data sets. Further evidence for this and background information on ProdCom is provided in Annex III of this report.

Whilst ProdCom would appear to include only new production in their estimates of quantity and turnover, the Wood Packaging Study includes pallet repairs as bone fide productive activity.

Further clues to the difference in interpretation being a major problem are provided by examining the average values from each data set.

The average price per new pallet as identified in the Wood Packaging Study for 2011 is £6.80. This is derived from a turnover of £206.6 million and from 30.4 million pallets produced.

The average price per new pallet produced, as measured by ProdCom for 2011 is £5.42. This is derived from the ProdCom turnover of £277.5 million and from 51.2 million pallets produced.

Assuming the Wood Packaging Study to be representative of activity in the industry, it appears that ProdCom - having the higher number - has probably included some repaired pallets within its totals for production.

If this were the case, the differences between the quantities of each data set could be reconciled. A simple simulation using the two data sets reveals this possibility:

The ProdCom total of 51.2 million pallets were made up from the 30.4 new pallets from the Wood Packaging Study with the balance being repaired pallets that have

been (by ONS definitions) mis-counted as new. If the average prices from ProdCom are used to derive a value for the 30.4 million new pallets, this would result in a turnover of £165 million. If the average price of repairs from the Wood Packaging Study is applied to the balance (of mis-counted repaired pallets) of around 20.8 million pallets, this would result in a turnover of (misclassified) repaired pallets of nearly £36 million. Adding the two, the quantity of 51.2 million pallets would generate a turnover of around £201 million – not too dissimilar to the Wood Packaging total of £207 million.

This would yield an average price within the ProdCom data of £3.92 per pallet which is close to the £3.87 per pallet in the Wood Packaging Study for all newly manufactured and repaired pallets.

There are other possibilities that could be generated from other simulations and the one chosen above has been selected to offer a plausible explanation for the differences between the two data sets, but there are other possibilities that would generate a different outcome.

Consequently, there is a need for further discussion with ONS to attempt to resolve these differences.

Following the production of this Wood Packaging Study report, ONS in Cardiff will be re-contacted with a view to establishing a constructive dialogue.

Annex I

Survey Questionnaire 1

Forestry Commission



This short survey form provides you with the opportunity to add your information to that of other organisations involved in the pallets and packaging industry. The results of this work are intended to measure the industry's capabilities opposite possible new EU legislation and help direct packaging, plant health and industry policy in the UK. The results will also help to understand trends in the market and enable companies to measure individual performance.

A confidential survey of TIMCON & Wood Packaging Material Marking Programme members on behalf of the Forestry Commission and Timcon. Individual company data will not be seen by Timcon members, Executive Committee or the Forestry Commission.

E-mail Survey Form - Please input the required information in grey, yellow, green and brown boxes and save this form on your server/computer. Then click on the e-mail address survey@timbertrends.net below, and attach the saved file to your e-mail and send.

Where the question requires a percentage answer precise calculation is not necessary; you only need to give your best estimate from your everyday knowledge of your business.

Questionnaire relates to activity in		2011			
Q1 - Quantitative Data					
	Measure	Wooden Packaging Activity (carried out by yourself)			
		New Wooden Packaging Excluding Pallets	New Wooden Pallet Production	Recycled Wooden Pallets (Repaired, Newlife, remanufactured)	Re-used Wooden Pallets (not repaired or remanufactured)
a. Sales Turnover per activity in £	£				
b. No. Employees engaged per activity	Number				
c. Quantity of wood packaging items processed per activity	Number of units				
d. Timber consumption of all sources and types	Cubic Metres				
Q2 - % Produced by Type					
	Measure	New Wooden Packaging Excluding Pallets	New Wooden Pallet Production	Recycled Wooden Pallets (Repaired, Newlife, remanufactured)	Re-used Wooden Pallets (not repaired or remanufactured)
a. 2-way entry	% of Q1c	N/A			
b. 4-way entry	% of Q1c				
Q3 - % Produced by Size					
	Measure	New Wooden Packaging Excluding Pallets	New Wooden Pallet Production	Recycled Wooden Pallets (Repaired, Newlife, remanufactured)	Re-used Wooden Pallets (not repaired or remanufactured)
a. 1000 x 1200 or 1200 x 1000	% of Q1c	N/A			
b. 800 x 1200	% of Q1c				
Q4 - Recycled Wooden Pallets by Type					
	Measure	New Wooden Packaging Excluding Pallets	New Wooden Pallet Production	All Recycled & Reused Wooden Pallets	
a. Repaired (less than 33% of components replaced)	% of Q1c	N/A			
b. Remanufactured (Newlife or remanufactured pallets from reclaimed wood more than 33% of components replaced)	% of Q1c				
Q5 - Timber Consumption by Source					
	Measure	All Wooden Packaging			
a. UK Production	% of Q1 d				
b. UK Recycled/Recovered	% of Q1 d				
c. Republic of Ireland	% of Q1 d				
d. Baltic States	% of Q1 d				
e. Finland	% of Q1 d				
f. France	% of Q1 d				
g. Germany	% of Q1 d				
h. Russia/Belorussia/Ukraine	% of Q1 d				
i. South America	% of Q1 d				
j. Sweden	% of Q1 d				
k. Other - specify	% of Q1 d				
Q6 - Percentage of Wood consumption by type					
	Measure	All Wooden Packaging			
a. Softwood (coniferous species, e.g. pine, spruce)	% of Q1d				
b. Hardwood (non-coniferous species, e.g. poplar/ aspen, birch alder)	% of Q1d				
c. Manufactured Wood (OSB, Plywood, Composite Blocks etc.)	% of Q1d				
Q7 - ISPM15 Capacity					
	Measure	All Wood Packaging			
a. What is the cubic capacity of the drying chambers you possess able to fulfil ISPM15 standard? (Note this is the usable internal volume of all of your chambers)	Cubic Metres				
b. What is the cubic capacity of drying chambers that you plan to install over the next 12 months. (Note this is the usable internal volume of your proposed chambers)	Cubic Metres				
c. What is the usual number of charges of Heat Treated wooden packaging that you complete in 24 hours?	Number				
d. What is the maximum number of charges of Heat Treated wooden packaging that you could complete in 24 hours?	Number				
Q8 - ISPM15 Activity					
	Measure	New Wooden Packaging Excluding Pallets	New Wooden Pallet Production	All Recycled & Reused Wooden Pallets	
a. What percentage of the wooden packaging activity that you carry out is carried out with bought in heat treated wood in accordance with the ISPM15 standard?	% of Q1c				
b. What percentage of all of the wooden packaging activity that you carry out is treated by you to ISPM15.	% of Q1c				
Q9 - Kiln Drying Capacity					
	Measure	All Wood Packaging			
a. What is the usual number of charges of Kiln Dried (including Heat Treatment) wooden packaging that you complete in 24 hours?	Number				
b. What is the maximum number of charges of Heat Treated wooden packaging that you could complete in 24 hours?	Number				
Q10 - How Do You See 2012?					
	Measure	New Wooden Packaging Excluding Pallets	New Wooden Pallet Production	All Recycled & Reused Wooden Pallets	
Please place a plus or minus sign or before your % number or 0 for no change					
f(i) Will total sales (quantity) increase/decrease/no change	%				
f(ii) Will ISPM15 sales (quantity) increase/decrease/no change	%				

Survey Questionnaire 2

Forestry Commission



This short survey form provides you with the opportunity to add your information to that of other organisations in the pallets and packaging industry. The results of this work are intended to measure the industry's capabilities opposite possible new EU legislation and help direct packaging, plant health and industry policy in the UK. The results will also help pallet and packaging suppliers to understand trends in the market and help companies to measure individual performance.

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Where the question requires a percentage answer precise calculation is not necessary; you only need to give your **best estimate** from your everyday knowledge of your business

Questionnaire relates to activity in		Wood Packaging Survey 2011			
Wooden Pallets	Measure	Pallet Production, Recycling & Re-use Activity			TOTAL
		New	Repaired/ Re-manufactured	Re-used	All Activity
1. Sales Turnover per Activity in £	£				
2. Quantity of Pallets Produced	Number of units				
3. Timber Consumption	Cubic Metres				
4. Timber Consumption by Source				Measure	% All Activity
4(i) UK Production					% of All Activity
4(ii) Imported					% of All Activity
5. Timber Consumption by Type				Measure	All Activity
5(i) Softwood (coniferous species, e.g. pine, spruce)					% of All Activity
5(ii) Hardwood (non-coniferous species, e.g. poplar, birch)					% of All Activity
5(iii) Manufactured Wood (OSB, Plywood, etc.)					% of All Activity
6. ISPM 15 Activity	Measure	Heat Treated to ISPM 15 Activity			
		New	Repaired/ Re-manufactured	Re-used	
6(i) % of Pallets (Quantity) Heat Treated to ISPM 15 by You	%				
6(ii) % of Pallets (Quantity) Heat Treated to ISPM 15 Bought-in	%				
7. How Do You See 2012?	Measure	Increase	Decrease	No Change	
7(i) Will total sales (quantity) increase/decrease/no change	%			If no change	
7(ii) Will ISPM15 sales (quantity) increase/decrease/no change	%			leave blank	
Non-Pallets (Cases, Boxes, Crates, Drums) - Wood Only					TOTAL
					All Activity
1. Sales Turnover	£				
2. Quantity Produced	Number of units				
3. Timber Consumption	Cubic Metres				
4. Timber Consumed by Source				Measure	% All Activity
4(i) UK Production					% of All Activity
4(ii) Imported					% of All Activity
5. Timber Consumed by Type				Measure	All Activity
5(i) Softwood (coniferous species)					% of All Activity
5(ii) Hardwood (non-coniferous species)					% of All Activity
5(iii) Manufactured Wood (OSB, Plywood)					% of All Activity
4. ISPM 15 Activity	Measure				% of Quantity Produced from Q 2 above
4(i) % (Quantity) Heat Treated by You	%				
4(ii) % (Quantity) Heat Treated Bought-in	%				
5. How Do You See 2012?	Measure				Put + or - before %
7(i) Will total sales (quantity) increase/decrease/no change	% + or -				
7(ii) Will ISPM15 sales (quantity) increase/decrease/no change	% + or -				

Annex II

Programme of Work & Methodology

The programme of work included the following processes:

1. Formulating and seeking approval for the survey questionnaire
2. Production of the questionnaire
3. Compiling the survey sample
4. Writing and seeking approval for the covering letter to accompany the survey questionnaire
5. Building the survey and analysis database to be used in the despatch and receipt of questionnaires
6. Despatch of the questionnaires to the survey sample
7. Receipt, checking and input of data to the analysis database
8. Chasing selected companies for response
9. Analysis and interpretation
10. Writing of the draft report
11. Production of the final report
12. Re-engagement with ONS to investigate differences between ProdCom data and findings of the Wood Packaging Studies.

The approach to and the methodology used for this 2011 Wood Packaging Study was very similar to that used for previous studies, in order to facilitate meaningful comparisons between the years.

The structure of the pallets and packaging manufacturing and repairs industry is different from many of the industries that operate in the UK economy. The market 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 repairs and also different ways of getting to market. This is exemplified by the difference between manufacturers and pallet pool operators, with manufacturers mostly selling their output while pallet pool operators rent pallets for use by customers.

Consequently, the research methodology adopted for this work required a different approach from usual stratified research sampling methods used in markets where there is less differentiation between companies.

There was also the important consideration to safeguard the results of the Wood Packaging Study from revealing – through detailed analysis – the likely individual response provided by the very large companies.

Consequently, the same approach as developed previously was employed which aimed to deliver information that was representative of the market; not skewed towards the few very large companies and at the same time protecting individual company data from view.

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.

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.

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 from the notional total. Consequently, a highly representative turnover figure could be derived, notwithstanding that some companies would fall below the mid-point turnover mark while others would be above that mark.

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.

The main difference between this study for 2011 and previous studies is the recognition that previous estimates for re-used pallets were incomplete and not representative. Accordingly, this report concentrates on presenting good data on productive activity only and estimates of re-used pallet activity have not been included.

Separate work would need to be carried out to attempt to measure re-use activity in the UK.

Annex III

Prodcom and Comparison to the Wood Packaging Study

Prior to the work of the Wood Packaging Studies, the only measure of the packaging industry's size was through the ProdCom series of reports published by the Office for National Statistics.

An initial study into the pallets and packaging market for the Forestry Commission in 2008, "To improve the accuracy of measuring the packaging and pallets market in the UK; for use in the programme of Improving Timber Utilisation Statistics" identified a relatively large standard error of estimation in ProdCom estimates. In that 2008 Forestry Commission report, which reviewed the Prodcom analysis for 2006, the total of pallets manufactured in the UK was 74.7 million. Using the standard error (in value) declared by ONS, this would, if converted to provide a possible range of volumes produced, result in a range in 2006 of between 67 and 83 million pallets.

This confirmed that the Prodcom estimates are not precise. It also suggests – assuming the findings of this series of Wood Packaging Studies are relatively representative – that the Prodcom Inquiry is not taking into account important parts of the market, when providing estimates.

Such a large variance in estimation is not uncommon in an industry such as the packaging industry which is highly populated with small to medium sized companies, but comparisons between ProdCom data and the outputs of the Wood Packaging Studies reveal further discrepancies within the ProdCom measurement on the industry.

The composition of the Prodcom sample for the 2006 ProdCom report, stratified by number of employees, was as follows:

No: of Employees	Total of All Businesses	Total Sampled
1-9	333	5
10-19	88	34
20-49	58	58
50-99	21	21
>100	6	6

All wooden container manufacturers employing 20 or more people formed part of the PRODCOM Inquiry.

This, apparently, guarantees that 85 of the largest companies in the industry contribute data to the Prodcom series. However, only 40% of companies employing between 10 and 19 employees were included in the Prodcom Inquiry and only 5 companies employing less than 10 employees contribute data to the Prodcom Inquiry. The low number of sampled companies in the smallest employee band is because of the requirement within the Prodcom Inquiry to limit the burden on small businesses.

ONS claim that allowance is made for the smaller companies, with estimates for that sector of the market included in the totals published.

This series of Wood Packaging Studies concludes that Prodcom's measurement of newly manufactured pallets is probably incomplete and quantification of repaired pallets non-existent. The causes for this were considered to be due to one or a number of factors.

These were,

- that the Prodcom Inquiry has failed to gather data from some companies (which would alter the data presented for estimation), or
- Prodcom has incorrectly interpreted all sales as newly manufactured pallets and made estimates based upon this incorrect assumption, or
- that some companies completing the Prodcom Inquiry have (incorrectly according to ONS definitions) included repairs activity in their return.

Additional investigation resulted in a short interim report in March 2011 entitled, "Production of Pallets in the UK - A Short Report on the Differences between ProdCom and (the Wood Packaging Study for) TIMCON".

This short report stated that the central difference between ProdCom and the TIMCON Wood Packaging Study is with the quantity of repairs.

According to ONS, from 2008, "Repair and Maintenance" was to be a separate (from manufacturing) activity within ProdCom.

Consequently, there continued to be confusion over where data on repaired and reconditioned pallets are located within the ProdCom series. The Office for National Statistics indicated in 2007 that these should be quantified in ProdCom Division 33.19, a separate division for the repair of a number of different products. However, ONS did not give any timing for this change. Consequently, it appears that repaired and reconditioned pallets are still being quantified within ProdCom Division 16.24, along with new manufactures.

There was a clear need to gain further clarification and ONS confirmed that pallet repairs should not be classified as production but placed within Division 33.19 of ProdCom (not Division 16 pallet production) under the heading "repair or reconditioning of wooden pallets, shipping drums or barrels, and similar items".

However, ONS do not collect these data as there is not a requirement placed upon it by Eurostat (the European body responsible for collection of EU statistics) to do so.

Further discussion with ONS has revealed that pallet rentals would not be included in Division 16 (pallet production) either. This activity would be coded to Division 77.39 "Renting and leasing of other machinery, equipment and tangible goods n.e.c". This includes pallets.

In the Wood Packaging Study, there is a clear identification of newly manufactured and repaired pallets.

Pallet pool operators contribute significantly to the total of repaired pallets and the three largest pool operators confirmed that they do not provide data for ProdCom, either in Division 16 or Division 33 or any other Division.

Consequently, the repairs to pallets made by pool operators are not recorded at all by ProdCom.

As indicated, It is likely that a pallet manufacturer's sales value of annual production in the ProdCom Inquiry would include newly produced pallets and repaired and re-manufactured pallets (and possibly re-used) all of which are likely to be reported as sales.

ProdCom claim to gather information from all companies with more than 20 employees and state that less than 2% of the many smaller companies in the industry are contacted, with estimates of their turnover made.

However, a request of TIMCON members to indicate whether they had been requested to return a ProdCom Inquiry (form) for 2011, running parallel to the Wood Packaging Study, revealed that there were a small number of companies, with significant turnovers, that had not been requested by ONS do this.

It would appear that there are some omissions and estimation anomalies within the ProdCom data on pallets.