cpet

Annual Review

UK Consumption of Sustainable Palm Oil

February 2017

Department for Environment Food & Rural Affairs

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Executive summary

In 2012, Defra published the UK Statement on Sustainable Production of Palm Oil. This statement, which was signed by trade associations for key palm oil using sectors, NGOs and Government as illustrated in Figure 1 below, set out the overarching commitment that "The United Kingdom is working towards achieving 100% sourcing of credibly certified sustainable palm oil by the end of 2015." [1]

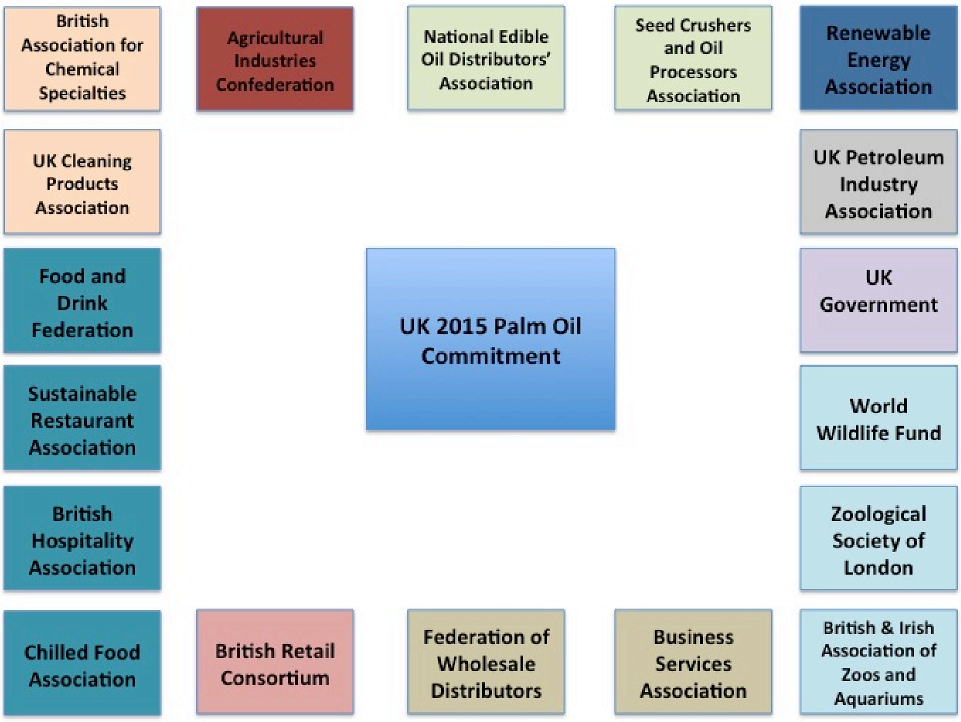

Figure 1: Signatories to the UK Statement on the Sustainable Production of Palm Oil

This analysis forms the fourth and final in the series of annual reviews to track the progress towards meeting this commitment by estimating the consumption of sustainable palm oil in the UK through 2015.

The findings for 2015 illustrated in Figure 2 indicate that the volume of UK palm oil purchases supported by RSPO certification has almost tripled since 2009 from 155,000 mt to 457, 294 mt, through imports[2] of Segregated and Mass Balance CSPO and purchases of GreenPalm certificates. Segregated and Mass Balance CSPO alone have increased almost six fold since 2009.

1 https://www.gov.uk/government/publications/sustainable-production-of-palm-oil-uk-statement
2 Excluding derivatives and finished goods

This is equivalent to either 87% or 108% of UK palm oil imports being supported by RSPO certification in 2015, compared to 24% in 2009. The proportion estimated differs depending on the data source used for import figures. A detailed discussion of the issues presented by the differing import figures can be found in Section 2.1.

This estimate of palm oil supported by RSPO supply chain models in the UK is based on:

- 326,033 mt of sales of Segregated and Mass Balance Certified Sustainable Palm Oil (CSPO) (excluding derivatives and finished goods) by UK refiners (equivalent to either 62% or 77% of UK import, depending on the source of import trade data), compared to 55,000 metric tonnes in 2009 and
- 131,261 mt of palm oil supported by purchases of GreenPalm certificates by UK companies. This supported the production of certified oil which would be equivalent to either 25% or 31% of UK import, depending on the source of import trade data, compared to 100,000 metric tonnes in 2009.

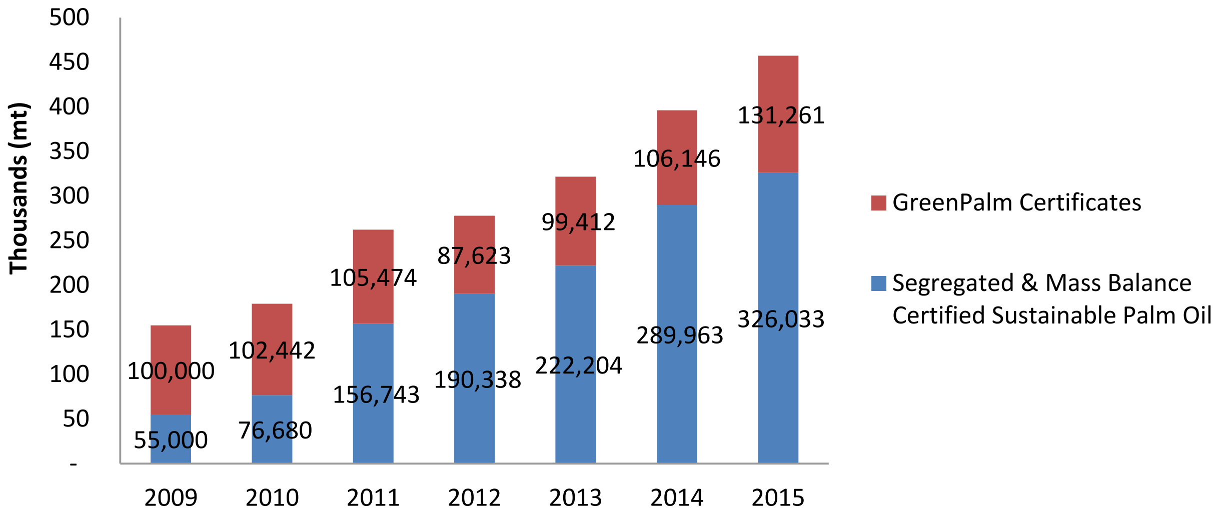

Figure 2 Certified Sustainable Palm Oil purchases in the UK supported by RSPO supply chain mechanisms, from the 2009 baseline figure (Source: CPET analysis of UK refinery data, 2016)

Since the 2009 baseline to 2015, the volume of Segregated and Mass balance CSPO has increased from 10% (Oil World) or 11% (FEDIOL) in 2009 of total CSPO to 62% (Oil World) or 77% (FEDIOL) in 2015. GreenPalm has increased from 18% (Oil World) or 20% (FEDIOL) in 2009 to 25% (Oil World) or 31% (FEDIOL) in 2015.

From 2014 to 2015 Segregated and Mass Balance CSPO increased by 12% from 2014 to 2015, a substantial although lower rate of increase than from 2013 to 2014 (with a tonnage increase of 30%). GreenPalm consumption increased as well, at a much greater rate than in the previous year (by 24% from 2014 to 2015 vs. 7% from 2013 to 2014).

Although the analysis contains limitations in terms of data accuracy and completeness, overall, the substantial increase in the volume and proportion of UK imports supported by RSPO supply chain models over the period of these annual reviews demonstrates considerable success in supporting the UK's goal to source 100% credibly certified sustainable palm oil by the end of 2015.

1. Introduction

1.1. *Background*

In 2012, Defra published the UK Statement on Sustainable Production of Palm Oil.[3] The statement drew together new and existing specific commitments on the sourcing of sustainable palm oil made by key organisations representing businesses within the palm oil supply chain in the UK and set out that "the United Kingdom is working towards achieving 100% sourcing of credibly certified sustainable palm oil by the end of 2015." It followed similar statements that were made in the Netherlands[4] and Belgium.[5] Since the UK statement, France, Germany, Denmark and Sweden have also launched sustainable palm oil initiatives. In December 2015, a group of national European organisations from Denmark, Germany, the Netherlands, Norway and the UK signed the Amsterdam Declaration in support of a "private sector-driven commitment to 100% sustainable sourcing and increased traceability of palm oil by no later than 2020."[6]

The Defra research report (2011) by Proforest *"Mapping and Understanding the UK Palm Oil Supply Chain[7]"* highlighted that 643,300 metric tonnes (mt) of palm oil (PO) and palm kernel oil (PKO) were imported into the UK in 2009, based on Oil World data (which excludes derivatives). It also estimated the proportion of that which was Certified Sustainable Palm Oil (CSPO), using RSPO supply chain models. The report noted that:

- **55,000 mt of Segregated and Mass Balance CSPO was imported into the UK** (excluding derivatives and finished goods) equivalent to 8.5% of UK imports;
- **100,000 mt of GreenPalm certificates were purchased by UK companies.** This supported the production of certified palm oil equivalent to 15.5% of UK import.

1.2. *Purpose*

In order to provide an indicator of progress towards meeting this commitment, Defra commissioned the Central Point of Expertise on Timber (CPET) to conduct an Annual Review of UK purchases of palm oil supported through RSPO supply chain models (Identity Preserved, Segregated, Mass Balance, GreenPalm) for the last four years, building upon the methodology employed in the Defra research report (2011). This fourth and final Annual Review aims to add to the estimate carried out for the subsequent years after the 2009 baseline in the initial 2011 study, and to assess the UK's performance in meeting the 2015 target.

[3] https://www.gov.uk/government/publications/sustainable-production-of-palm-oil-uk-statement
[4] http://www.taskforceduurzamepalmolie.nl/Portals/4/download/Manifesto_Task_Force_Sustainable_Palm_Oil.pdf
[5] http://www.sustainabelpalm.be/
[6] http://www.euandgvc.nl/documents/publications/2015/december/7/declarations-palm-oil
[7] Proforest (2011). Mapping and Understanding the UK Palm Oil Supply Chain and Analysis of Policy Options. http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=17170

1.3. Approach

There is no single, straightforward, universally-applied definition of sustainable palm oil.[8] However, collaborative efforts have been made to produce palm oil more sustainably and different schemes and approaches have been developed to meet various demands.

These include the Roundtable of Sustainable Palm Oil (RSPO), which is the main scheme delivering CSPO into the UK market, through RSPO supply chain models. A further means for distinguishing the sustainability credentials of palm is the International Sustainability & Carbon Certification (ISCC) system, which is applicable for biofuel reporting under the Renewable Transport Fuel Obligation and the Renewable Obligation.

There are four supply chain models for RSPO Certified Sustainable Palm Oil (CSPO) which are addressed in this report:

- **Identity preserved**: The Identity Preserved (IP) supply chain model assures that the RSPO certified oil palm product delivered to the end user is uniquely identifiable to a single RSPO certified mill and supply base. The batch must be kept physically isolated and not mixed with other certified or non-certified sources of oil palm. There is a chain of custody of supply chain certification and 3rd party auditing, which allows end users to claim that their product contains certified sustainable palm oil.
- **Segregated**: The Segregated (SG) supply chain model assures that RSPO certified oil palm products delivered to the end user come only from RSPO certified sources. It permits the mixing of RSPO certified oil palm products along the supply chain from more than one certified source. There is a chain of custody of supply chain certification and 3rd party auditing, which allows end users to claim that their product contains certified sustainable palm oil.
- **Mass balance**: The Mass Balance system allows for mixing of RSPO and non-RSPO certified palm oil in the supply chain provided that overall site quantities are controlled. It works through supply chain certification system with 3rd party auditing. The Mass Balance (MB) supply chain model administratively monitors the trade of RSPO certified oil palm products throughout the entire supply chain, as a driver for mainstream trade in sustainable palm oil. MB can only be operated at site level (mass balance credits cannot be transferred from site to site). It helps to actively promote the physical supply chain in RSPO certified palm oil. There is a chain of custody of supply chain certification and 3rd party auditing, which allows end users to claim that their product contributes to the production of certified sustainable palm oil.
- **Book and claim (GreenPalm)**: CSPO produced by the certified mill can be converted into

[8] http://www.cpet.org.uk/palm-oil-folder/what-is-sustainable-palm-oil-1

GreenPalm certificates. One GreenPalm certificate represents 1 metric ton of CSPO. GreenPalm certificates are offered on a web-based market and can be purchased by manufacturers, retailers and any other users of oil palm based ingredients who want to support the production of CSPO and do not have reasonable access to physical supply chains. The CSPO that is produced and supported enters the global supply chain as non-certified palm and the buyer of certificates continues to source oil palm based ingredients that may or may not be certified.

In order to reflect the approach taken in the 2011 Defra report, these annual reports focus on UK palm oil purchases supported by RSPO certification, including sales of crude Segregated and Mass Balance CSPO (excluding derivatives and finished goods) by UK refiners[9] and GreenPalm certificates purchased by UK companies and ISCC certified biofuel, as an indicator of the consumption of sustainable palm oil in the UK. A full methodology and discussion of the methodology's limitations can be found in Annex 1.

[9] The previous year's report tracked a combination of import and sales of segregated and mass balance CSPO from UK refiners. This year only sales data was available due to commercial sensitivity around disclosing import figures.

2. Progress towards UK commitment

This analysis has focused on UK palm oil purchases supported by RSPO certification, including the import and sale of Segregated and Mass Balance CSPO (excluding derivatives and finished goods) by UK refiners and purchase of GreenPalm certificates in the UK, as the core indicator of sustainable consumption of palm oil for the UK.

In addition to imports and GreenPalm certificates, the analysis has attempted to illustrate progress in the finished goods and biofuels sectors and provide some commentary on the consumption of palm kernel meal. Given the highly complex nature of palm oil supply chains and the risk of significant double counting of sustainable palm oil claims, the analysis presents these figures separately.

2.1. Main findings

The findings indicate that in 2015 UK purchases of palm oil supported by RSPO certification (described in section 1.3) have tripled since 2009 as illustrated in Figure 3 below. This estimate of purchases of UK palm oil supported by RSPO supply chain models in the UK comprises:

- 326,033 mt of imports of Segregated and Mass Balance Certified Sustainable Palm Oil (CSPO) (excluding derivatives and finished goods) by UK refiners (equivalent to either 62% (scenario 1, see below) or 77% (scenario 2, see below) of UK import, depending on which trade data source is used) and
- 131,261 mt of palm oil supported by purchases of GreenPalm certificates by UK companies.[10] This supported the production of certified oil equivalent to either 25% (scenario 1) or 31% (scenario 2) of UK import, depending on which trade data source is used.

Together this accounts for 457,294 mt of palm oil. As an indicator of UK support for CSPO through RSPO supply chain models this shows a rise of nearly 302,294 mt since 2009.

[10] These companies are headquartered in the UK.

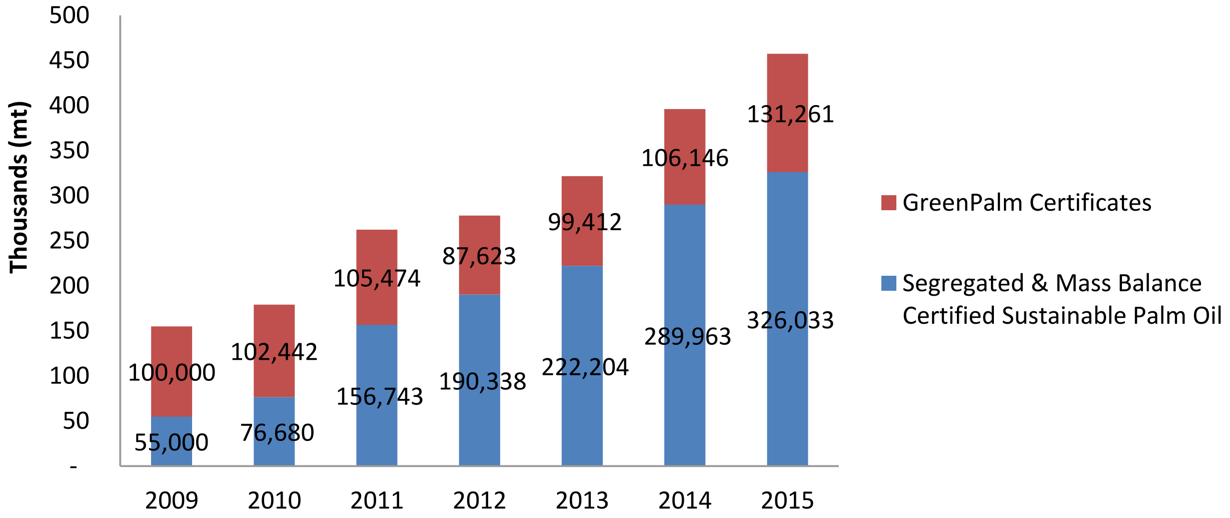

Figure 3 Certified Sustainable Palm Oil purchases in the UK supported by RSPO supply chain models, from the 2009 baseline figure in metric tonnes (Source: CPET analysis of UK refinery data, 2016)

Since the 2009 baseline, the volume and the proportion of UK palm oil imports covered by RSPO supply chain models has steadily increased. The volume and proportion of Segregated and Mass balance CSPO has also increased year on year. In the past year Segregated and Mass Balance CSPO increased at a lower rate than in the previous year (by 12% from 2014 to 2015 vs. by 30% from 2013 to 2014). GreenPalm consumption increased as well, at a much greater rate than in the previous year (by 24% from 2014 to 2015 vs. by 7% from 2013 to 2014). Overall, Segregated and Mass Balance have increased almost six fold since 2009.

Two scenarios have been established to calculate the proportion of total UK imports of palm oil, based upon two different data sources for total UK imports, as illustrated below (Figure 4). In Scenario 1 (Figure 4a), total UK imports have been based upon Oil World data. This shows the 2009 baseline highlighted in green as Oil World data was used in the 2011 Defra report. UK imports for Scenario 2 (Figure 4b) are based upon data provided by FEDIOL.

Scenario 1: Proportion of GreenPalm and Segregated/Mass Balance CSPO in the UK (based on Oil World data)

Scenario 2: Proportion of GreenPalm and Segregated/Mass Balance CSPO sustainable consumption in the UK (based on FEDIOL data)

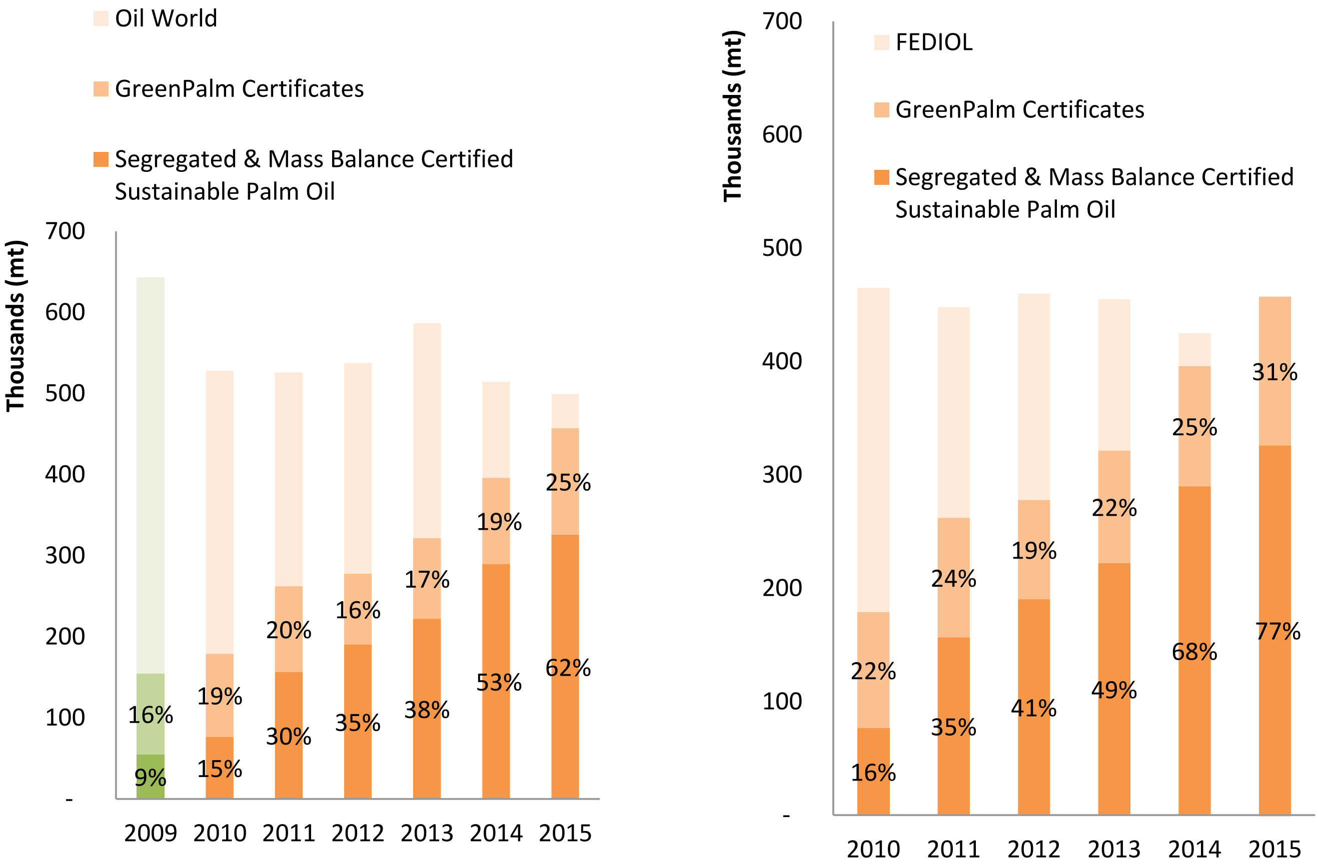

Figure 4 Proportion of palm and palm kernel oil in the UK purchased through GreenPalm Certificates and Segregated/Mass Balance supply chain models, compared to total UK imports using both a) Oil World datasets and b) FEDIOL (Source: CPET analysis of UK refinery data together with Oil World and FEDIOL data, 2016)

This analysis has included both Oil World and FEDIOL import data as opinions differ on which is the more accurate. *Question eight of the Annual Stakeholder Survey asked stakeholders 'Which import figures (FEDIOL, Oil World, or other data source) best reflect your experience?' In previous years, those who responded to this question represented all major UK refiners, and most respondents chose FEDIOL. This year, 50% of the respondents chose FEDIOL, 25% chose Oil World, and 25% chose other data sources.*

In Scenario 1 (Figure 4a) indicates that in 2015 UK purchases of RSPO supply chain models (Segregated and Mass Balance CSPO, or through the purchase of GreenPalm certificates) is equivalent to 87% of total imports by UK refiners (excluding derivatives and finished goods). Here the import estimate is based upon Oil World figures, which use EUROSTAT trade data and then gather additional trade data through market intelligence.

In Scenario 2 (Figure 4b), the 2014 UK import by UK refiners (excluding derivatives and finished goods) supported through purchases of RSPO supply chain models is equivalent to 108%. Here the total imports estimate of palm oil and palm kernel oil is based solely on trade data from EUROSTAT, via FEDIOL. FEDIOL collects trade data from EUROSTAT later in the year, once it has been fully updated.

Comparing the two different scenarios, the estimated proportion of palm oil imports in the UK accounted for through purchases of palm oil supported by RSPO certification is equivalent to either 87% (Scenario 1, Oil World) or 108% (Scenario 2, FEDIOL), depending upon the baseline trade data used.

Using either Oil World or FEDIOL figures, the UK has performed well in supporting the target of working towards achieving 100% sourcing of CSPO by 2015.

The estimate of 108% of UK palm oil imports being supported by RSPO certification in 2015 is clearly problematic. As set out above the two different estimates of the volume of imports into the UK (by Oil World and FEDIOL), may contain inaccuracies as quality and reliability of both trade data and market intelligence may vary. Furthermore there is a potentially small risk of double counting UK palm oil purchases supported by RSPO certification. This can happen if GreenPalm purchases are used to account for palm oil which previously held a physical claim as Segregated or Mass Balance, having lost the claim during progress down the supply chain (which may be unknown to the buyer). A further discussion of the limitations of this analysis' methodology and the data collected can be found in the Discussion section below, Paragraph 2.5, Paragraph 2.6 and in Annex 1.

2.2. Progress in finished goods

Palm oil purchased in 2014-15 by UK based consumer goods producers and retailers that was supported by RSPO certification, was estimated using information reported to the RSPO. This includes purchase of Segregated and Mass Balance CSPO products and GreenPalm certificates.

Both these figures are for finished goods and are excluded from the main findings for imports, to avoid the significant risk of 'double counting'.

In 2014-15 palm oil supported by RSPO certification purchased by **UK RSPO Retail Members**, was approximately 55,675 metric tonnes. In the same year palm oil supported by RSPO certification purchased by **RSPO Consumer Goods Manufacturers Members** (identified as significant UK purchasers of palm oil), was approximately 558,981 metric tonnes. In previous years we reported on total uncertified metric tonnes of both own-brand and private label palm oil purchased by the same RSPO members as well. This year we were unable to do so due to data incompleteness.[11]

Because RSPO could only provide aggregate data for own-brand/private label, there is a risk that some own-brand/private label palm oil was double-counted between Retailers and Manufacturers, who may be selling private label palm oil to retailers.

This progress highlights the efforts of these two sectors to support sustainable consumption of palm oil in the UK.

2.3. Consumption of palm kernel meal

Imports of palm kernel meal in the UK accounted for 385,100 mt in 2015, compared to 663,300 mt in 2009, according to Oil World data. According to FEDIOL data, imports of palm kernel meal in the UK accounted for 382,000 mt in 2015, compared to 663,000 mt in 2009. There is little discrepancy between FEDIOL data and Oil World data for palm kernel meal.

According to the Defra report (2011), in 2009 over 80% of the imported palm kernel meal was used for animal feed, with the remaining 20% going into electricity generation.

Unfortunately, reliable data on the uptake of Segregated and Mass Balance CSPO across the animal feed sector was not available. However, it should be noted that some animal feed suppliers have made commitments to purchasing sustainable palm kernel meal, including through RSPO membership and purchase of Segregated or Mass Balance CSPO. This progress has been reflected in Section 2.2 through analysis of RSPO ACOP data for Consumer Goods Manufacturer Members.

In Section 2.4 below an estimate of the use of sustainable palm kernel meal (also referred to as Palm Kernel Expeller (PKE)) and Palm Fatty Acid Distillate (PFAD) (which can be refined from both palm kernel oil and palm oil) in the biofuels sector has been made.

2.4. Progress in the biofuels sector

Sustainable consumption of palm oil within the biofuels sector is controlled by the Renewable Fuels Transport Obligation (RFTO) and the Renewable Obligation (RO).

The statistics of the RFTO are in their seventh year of reporting with the most recent running from the 15th April 2015 to the 14th April 2016. It should be noted that this RFTO reporting

[11] RSPO ACOP also indicated that some figures from last year were inaccurate. Please see Annex A1.1.2 for further explanation.

calendar does not directly correspond to the reporting calendar used by RSPO's Annual Communication of Progress. In year eight, 100% of biofuels were sustainable, as illustrated by Figure 5 below. As the graph illustrates, biofuels have been 100% sustainable since year 5.

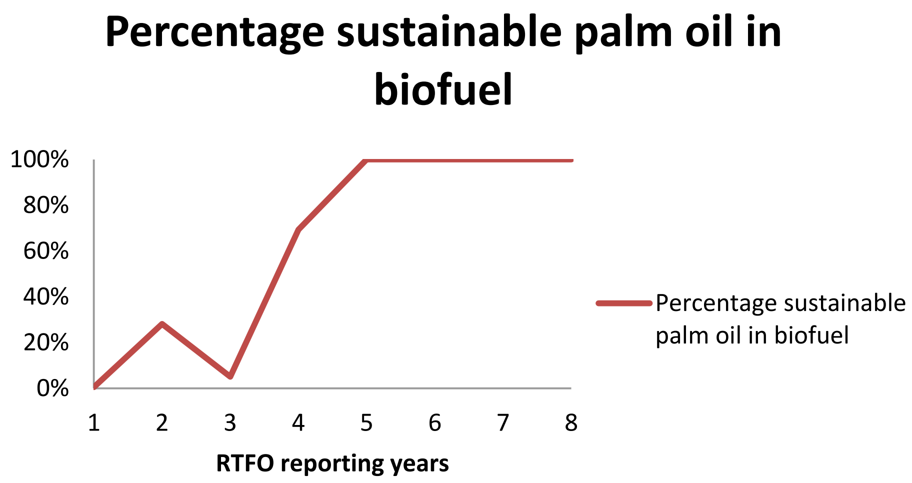

Figure 5 Proportion of palm and sustainable palm of all types of biofuels reported under the RTFO (Source: CPET analysis of UK Renewable Transport Fuel Obligation statistics, 2016)

There has been a substantial decrease in the volumes of palm oil in the last six years of reporting from 127,008,760 litres in Year 1 (2008-9), which represented 9.9% of all biofuels, to 23,217 litres in Year 7 (2014-15), representing 0.19% of biofuels. This decline in the use of palm oil as a biofuel in the UK has been attributed to policy changes such as the introduction of the Renewable Energy Directive (RED). This was adopted by the EC in 2009 and adapted into the UK's existing Renewable Transport Fuel Obligation (RTFO).

Changes to the RFTO, as a result of the RED, included mandatory sustainability criteria such as robust Greenhouse Gas Emission targets and land criteria, to ensure the lifecycle GHG emissions of biomass are acceptable and to prevent adverse land use change such as deforestation. Some biofuel suppliers may have found it hard to purchase palm oil and palm kernel oil products which complied with these requirements, leading to a reduction in their use in the biofuels sector.

The Renewables Obligation (RO) provides incentives for large-scale renewable electricity generation by requiring UK suppliers to source a proportion of their electricity from eligible renewable sources, including palm oil plantations.

Palm Kernel Expeller (PKE, also known as palm kernel meal) and Palm Fatty Acid Distillate (PFAD) are the main palm products consumed by the electricity generators in the UK claiming support under the Renewables Obligation Scheme. According to the Annual Sustainability Report 2014-2015 (Ofgem, 2016), in 2014-15 there was no PKE or PFAD consumed, compared to the consumption of a mixture of PKE and PFAD in some previous years - 48,012 in 2011-12, 17,735 mt in 2010-11 and 113,090 metric tonnes in 2009-10. This fluctuation is likely to be driven by a number of factors, which could include availability of PKE and PFAD.

2.5. Discussion of main findings

As the 108% CSPO sourcing figure based on FEDIOL trade data indicates, there are some limitations in our analysis, due to issues with data accuracy and completeness.

First, the baseline data used from Oil World and FEDIOL may only be relied upon as best estimates. The tonnage of UK conventional palm oil consumption could be under or overestimated. FEDIOL has estimated a lower import of palm oil into the UK than Oil World and relies on the accuracy of individual countries customs data, and accuracy and methodology may vary among reporting countries.[12] Oil World on the other hand attempts to account for this discrepancy by triangulating with market intelligence, but cannot claim 100% accuracy either. If UK consumption of conventional palm oil based on trade figures is underestimated, this could lead to a figure of greater than 100% CSPO in the UK. Whilst this could be the case for FEDIOL data, it should be noted that in the stakeholder survey, 50% of respondents, several of whom represent industry experts, preferred the FEDIOL estimate.

Second, because the percentages of sustainable palm oil are based on both refinery sales figures of sustainable palm oil, as well as the purchase of GreenPalm certificates by UK companies, there is a potentially small risk that double counting may occur, contributing to an overestimation of CSPO in the UK. This is because some physical CSPO products may be sold in the UK as conventional palm oil products and downstream supply chain buyers of processed products may be unaware of upstream claims and purchase GreenPalm certificates to cover their palm oil consumption. The purchase of Segregated or Mass Balance CSPO without passing the RSPO label claim to buyers could be due to the relatively small but not insignificant administrative burden and cost of RSPO supply chain certification. Buyers of processed products might then purchase GreenPalm certificates to cover their consumption of products containing palm oil, unaware of RSPO Segregated or Mass Balance certification claims further up the supply chain relating to the palm oil in their product. No data is available to estimate the risk of double counting, although industry experts have indicated they feel the risk is low.

[12] Eurostat Data Quality issues are discussed here: http://ec.europa.eu/eurostat/statistics-explained/index.php/International_trade_statistics_-_background

Furthermore, this analysis does not account for palm oil imported and consumed in the UK downstream in the form of finished goods. Data on these volumes is currently extremely difficult to track and obtain. We have attempted to provide an indication of the amount of sustainable palm oil used by retailers and consumer good manufacturers that are based in the UK in finished goods using the RSPO ACOP data (see Section 2.1). This palm oil is however not included in the total figure for annual total UK consumption figure, and as a result, can be considered a lacuna in our analysis. Further discussion of the methodology can be found in Annex 1.

2.6. Conclusions and Next Steps

Since the 2009 baseline, the overall volume and the proportion of UK palm oil imports supported by RSPO supply chain models has steadily increased. According to Oil World and FEDIOL figures, the UK has performed well in reaching the target to source 100% CSPO by 2015. The volume accounted for by imports of Segregated and Mass Balance CSPO has increased almost six fold overall. There has overall been an upward trend in the purchase of GreenPalm certificates by UK companies from 2009 to 2015, though the increase is smaller than that seen for imports of Segregated and Mass Balance CSPO. This is likely to be due to more companies switching from purchase of GreenPalm certificates to purchase of Segregated and Mass Balance CSPO. These figures were echoed by stakeholder views expressed in the Stakeholder Survey this year and in previous years.

However, due to the limitations of the methodology, and potential inaccuracies in the data collected work remains to be done on ensuring that UK palm oil sourcing is as sustainable as possible. This includes measuring palm oil imported in the UK in finished goods and ensuring its sustainability, switching to 100% physical CSPO usage, and working with international partners on increase the number of global CSPO supply chains. Some of these were addressed by stakeholders in their responses to question nine of the Stakeholder Survey: *'What is your experience of the demand of (sustainable) palm and palm kernel oil in the UK?'*

Comments on the trend in demand for sustainable palm and palm kernel oil included:

- Some stakeholders felt that demand for sustainable palm oil had increased but was not at 100%.

Challenges noted by stakeholders included:

- Both tracking and sourcing affordable sustainable palm derivatives and palm kernel oil in imported/finished goods. Several stated that this should be included in this consumption analysis and that not including them makes these figures inaccurate.
- Promoting GreenPalm, when it does not represent physical CSPO.

- Increasing the demand for CSPO from the foodservice industry and government procurement.

Although the analysis contains limitations in terms of data accuracy and completeness, overall, the substantial increase in the volume and proportion of UK imports supported by RSPO supply chain models over the period of these annual reviews demonstrates considerable success in supporting the UK’s goal to work towards sourcing 100% credibly certified sustainable palm oil by the end of 2015.

Annex 1. Methodology

This section describes in detail how the total of UK sustainable palm and palm kernel oil, as a percentage total of total UK consumption was calculated. This analysis builds on the methodology used to obtain estimates of UK sustainable palm oil consumption in the Defra research report (2011) 'Mapping and Understanding the UK Palm Oil Supply Chain (EV0459)', undertaken by Proforest.

That report estimated 643,400 mt of palm oil imported in 2009 including PO and PKO, including direct fractions, olein and stearin and palm fatty acid distillate. These 2009 import figures were developed using trade data. Imports of finished products, derivatives, oleochemicals and PKM were excluded from the 2009 estimate.

Consequently, to ensure that the 2009 estimate can be used as a baseline, this study also excluded imports of finished products, oleochemicals and derivatives.

A1.1 Estimating UK consumption of sustainable palm oil and palm kernel oil

The highly complex nature of palm oil (PO) and palm kernel oil (PKO) supply chains means that it is not currently possible to develop a reliable indicator of total palm oil use in the UK, including PO and PKO found in finished goods.

However, volumes of PO and PKO imported into the UK were used in the Defra research report (2011) as a reliable indicator of consumption in the UK market and consequently also been used for this Annual Review.

Based on the Defra research report (2011), UK palm oil purchases supported by RSPO certification includes Identity Preserved, Segregated and Mass Balance Certified Sustainable Palm Oil products and GreenPalm's Book and Claim system. In addition, in the context of biofuels, palm oil certified under the International Sustainability and Carbon Certification system (ISCC), is for the purposes of this analysis considered as sustainable.

A1.1.1. Imports of sustainable PO and PKO

Total volumes of UK imports and sales of PO and PKO have been gathered from two data sources FEDIOL and Oil World for the years 2009, 2010, 2011, 2012, 2013, 2014 and 2015. Both FEDIOL and Oil World use trade data from EUROSTAT, taking into account the same tariff lines for palm oil and palm kernel oil. EUROSTAT relies upon submissions of trade data from individual countries.

FEDIOL uses EUROSTAT data, without any further revision, although it collects the EUROSTAT data later in the year once it has been refined. Oil World on the other hand uses trade intelligence to refine their estimates of PO and PKO data including imports into the UK. Consequently, two scenarios have been developed to reflect the different data sets.[13]

The volume of palm oil supported by RSPO supply chain models was estimated by collating the submissions of data generously provided from GreenPalm, UK refineries with the help of the Seed Crushers and Oil Processors Association (SCOPA), together with data from RSPO's Annual Communication of Progress (ACOP)[14]. This was used to estimate the proportion of PO and PKO imports accounted for by Segregated and Mass Balance CSPO and purchase of GreenPalm certificates by UK companies.

A1.1.2. Consumption of sustainable PO and PKO by Consumer Goods Manufacturers and Retailers

Volumes of PO and PKO reported in the RSPO ACOP 2014-15 were used to analyse UK RSPO Retail and Consumer Goods Manufacturers Members sustainable palm oil consumption.

This was done by collating the RSPO ACOP data for volumes of 'RSPO certified' palm oil in metric tonnes (which includes Segregated and Mass Balance CSPO and GreenPalm certificates from companies operating in the UK).

In previous years, purchases of CSPO for RSPO Retail and Consumer Goods Manufacturers Members, supported through RSPO supply chain models, were compared to the total PO and PKO own brand and private label purchases claimed by the same RSPO members. In 2014-15 due to data incompleteness we were unable to report these figures.

In previous years, because RSPO could only provide aggregate data for own-brand/private label, there was a risk that some own-brand/private label palm oil was

[13] With their latest annual statistics publication, Oil World revised their palm oil figures retrospectively for 2012 and 2013 by 2% and 3% respectively. These new figures are not reflected in this report's findings, in order to maintain continuity in reporting.
[14] http://www.rspo.org/en/annual_communications_of_progress

double-counted between Retailers and Manufacturers, who may be selling private label palm oil to retailers.

In 2012, the UK market share of top international companies was added into the total, whilst the international market share of top UK companies was subtracted from the total, in order to account for palm oil used by companies with international market presence. This analysis was not included in the previous three year's calculations due to a lack of reliable data on UK and international market shares.

It should be noted that RSPO member's data reported through the RSPO ACOP digest has been used as the only data source for estimating the consumption of sustainable PO and PKO by finished goods producers and retailers. RSPO membership accounts for a relatively high proportion of all consumer goods manufacturers and retailers, but not all. This means that the estimated total consumption and estimated sustainable consumption is likely to be an underestimate.

In 2013-14, some data submitted by members to ACOP in the Consumer Goods Manufacturers category was inaccurate, due to a misunderstanding on the correct reporting metric (kg vs. Mt). We previously reported that palm oil supported by RSPO certification purchased by RSPO Consumer Goods Manufacturers Members (identified as significant UK purchasers of palm oil), was approximately 2,727,666 metric tonnes, in addition to a total 905,521 metric tonnes of both own-brand and private label palm oil purchased by the same RSPO members. Based on ACOP's corrections, this should be 224,293 metric tonnes, plus an additional 411,834 metric tonnes of both own-brand and private label palm oil.

A1.1.3. Consumption of PO and PKO for biofuels

Volumes of total as well as sustainable palm oil used in biofuels have been gathered from the Renewable Transport Fuel Obligation statistics[15] for the last 8 year periods and have been used to produce an accompanying figure (see Figure 4).

Volumes of total and sustainable palm oil used by electricity suppliers under the Renewable Obligation (RO) have been gathered from OFGEM Annual Sustainability Report series.

A2.1. Stakeholder consultation

[15] https://www.gov.uk/government/publications/renewable-transport-fuel-obligation-statistics-period-5-2012-13-report-4

An online questionnaire (found in Annex 2) was sent to key stakeholders. Questions were designed to triangulate the trade, refinery and RSPO ACOP data with stakeholder views, by asking stakeholders to select their relevant sector and choose which set of import figures best reflect their experience.

This approach aimed to enhance the levels of stakeholder feedback from the previous study, whilst maintaining commercial confidentiality. The questionnaires also allowed the opportunity for stakeholders to comment and provide their own estimates and data where they wished.

A3.1. Final analysis

Once stakeholder feedback on the initial estimates had been gathered, figures were refined.

A3.1.1. Assumptions and Limitations

Due to the complex nature of palm oil supply chains and the availability of data it has been inevitable that a number of assumptions have been made at each stage of the analysis. Where possible these have been in line with the previous research and/or informed by stakeholder engagement. This section explains what assumptions have been made during the analysis.

Calculating the total consumption of UK palm and palm kernel oil:

- Total UK consumption has been defined as the total imports in volume for a given year (metric tonnes). Two scenarios have been established to calculate the proportion of total UK imports of palm oil that the estimated volume of sustainable palm oil represents, based upon two different data sources for total UK imports, as illustrated in Figure 3. In Scenario 1 (Figure 3a), total UK imports have been based upon Oil World data, which was the data source used by Proforest for the 2009 estimate of imports of palm oil and which uses EUROSTAT trade data and then gather additional trade data through market intelligence).[16] UK imports for Scenario 2 (Figure 3b) are based upon solely EUROSTAT data provided by FEDIOL.
- *Question eight of the Stakeholder Survey asked stakeholders 'Which import figures (FEDIOL, Oil World, or other data source) best reflect your experience?' Two out of four respondents chose FEDIOL, one chose Oil World, and one chose other data sources.*

[16] With their latest annual statistics publication, Oil World revised their palm oil figures retrospectively for 2012 and 2013 by 2% and 3% respectively. These new figures are not reflected in this report's findings, in order to maintain continuity in reporting.

- Based upon stakeholder feedback, this analysis has included both Oil World and FEDIOL import data.
- Derivatives and finished goods have not been included in the import figures. This means that the import figures are likely to be an underestimate.

Calculating the volumes of sustainable palm and palm kernel oil:

- This analysis defines CSPO in the same way as the Defra research report (2011), which includes RSPO supply chain models Mass Balance and Segregated Certified Sustainable Palm Oil and GreenPalm certificates. In addition this study also includes information about palm oil consumption for biofuels under the International Sustainability & Carbon Certification as sustainable for biofuels reported under the Renewable Transport Fuel Obligation (RTFO) and Renewables Obligation (RO).
- The previous Defra research report (2011)[17] identified a range of companies that imported palm oil into the UK. As the major importers of palm oil into the UK (as substantiated by stakeholder engagement) this analysis refined the original approach taken in 2011 and focused solely on the refinery data, as the most robust means to capture the upstream supply sustainable palm oil in the UK.
- *It should be noted that the estimate of imports of Segregated and Mass Balance Certified Sustainable Palm Oil (CSPO) is likely to be an underestimate as it is based upon import data from UK refiners only and excludes imports by other companies.* In 2012, UK refiners accounted for either 70% of all imports, based on Oil World data or 82%, based on FEDIOL data. Total import data from all 3 refiner groups was unavailable in 2013. As a result, a refinery import and sales figures were used. In 2014 and 2015, only sales figures were available for use. This is unlikely to make a significant impact on the result as the difference between refinery import and sales figures will likely not be very large.
- Because the percentages of sustainable palm oil are based on both refinery sales figures of sustainable palm oil, as well as the purchase of GreenPalm certificates by UK companies, there is a potentially small risk that double counting may occur, contributing to an overestimation of CSPO in the UK. This is because some physical CSPO products may be sold in the UK as conventional palm oil products and downstream supply chain buyers of processed products may be unaware of upstream claims and purchase GreenPalm certificates to cover their palm oil consumption. The purchase of Segregated or Mass Balance CSPO without passing

[17] Annex A: UK importers of palm oil

the RSPO label claim to buyers could be due to the relatively small but not insignificant administrative burden and cost of RSPO supply chain certification.

- The RSPO Annual Communication of Progress data was used to assess the downstream consumption of sustainable palm oil for the UK (the ‘consumer goods producers’ and ‘retailer’ classifications), although this is likely to be an underestimate as it excludes purchases made by non-RSPO members. All UK registered companies were included in the analysis. This consumption data was not included in overall figures showing sustainable palm oil consumption in the UK.

Annex 2. Stakeholder questionnaire

The table below is a copy of the questionnaire used to conduct the survey of stakeholder views, to consult on the preliminary findings.

	Background The United Kingdom worked towards achieving 100% sourcing of credibly certified sustainable palm oil by the end of 2015. Defra has asked CPET (Central Point of Expertise on Timber) to undertake a Review in order to track the progress towards the UK made towards meeting this commitment by estimating the consumption of sustainable palm oil in the UK for subsequent years. This final Annual Review builds upon the methodology and the findings of the Defra research report "Mapping and Understanding the UK Palm Oil Supply Chain" (2011). The Review focused on the import of palm oil in the UK as the core indicator of sustainable consumption of palm oil for the UK. As such, the results presented throughout this questionnaire are related to: • imports of mass balance or segregated Certified Sustainable Palm Oil and palm kernel oil (RSPO or equivalent), and • consumption of palm oil accounted for through purchases of GreenPalm certificates **About this survey** Your input into this Annual Review is essential to our analysis. The survey consists of **15 questions** and should take approximately **15 minutes** to complete. Would you please be able to complete the survey by **September XX** at the latest. In the following, we would like to ask for your views on our initial preliminary findings. Please note that the findings have not yet been approved for publication and may change. The complete findings are due to be published in early October. If you would like to share our preliminary findings externally, please contact us. **How to complete this survey** Please select the answer(s) which best reflect your view and make as many comments as you would like. It would be very helpful if you can provide examples that support your views. Note that some questions have an option to select more than one answer and you can always insert comments. If you would like more information or need help completing this questionnaire, please contact us or visit our website.
	Reviewing the 2009 baseline estimate of sustainable palm and palm kernel oil in the UK
	The Defra research report (2011) estimated that in 2009 the consumption of sustainable palm and palm kernel oil in the UK was equivalent to 155,000 metric tonnes or 24% of total UK imports.
1	Do you agree or disagree with the Defra research report estimate for 2009 that the equivalent of 155,000 metric tonnes of sustainable palm oil were consumed in the UK (24% of UK imports)?
	CPET methodology for 2015 analysis
	As an indicator for the consumption of sustainable palm oil in the UK this analysis has focused on the import and supply of RSPO mass balance or segregated

	Certified Sustainable Palm Oil (excluding derivatives and finished goods) by UK refineries and accounted for by GreenPalm certificates by UK based companies. This has been supplemented by RSPO ACOP figures on UK retail and manufacturing for additional commentary on progress on the sustainable consumption of palm oil in the UK. Total volumes of UK imports of palm and palm kernel oil have been gathered from the following two data sources: 1) FEDIOL (representing the EU vegetable oil and protein meal Industry) and 2) Oil World (the independent forecasting service for oilseeds, oils and meals). Both FEDIOL and Oil World use trade data and have generated significantly different figures.
2	Do you have any comments on the CPET method used?
3	Do you have any comments on potential non-refinery imports we should include in our analysis?
4	Do you have any general comments on the use of Oil World and FEDIOL as data sources?
5	Do you have any comments on other trade data sources that should be considered during the analysis?
	Summary findings - your views
6	Do you agree or disagree with the estimate that in 2015 approximately 326,033 metric tonnes of UK imports of palm and palm kernel oil were sustainable through mass balance or segregated Certified Sustainable Palm Oil, and 131,261 metric tonnes were sustainable as accounted for by GreenPalm certificates?
7	The preliminary findings indicate that volumes of mass balance and segregated Certified Sustainable Palm Oil showed a significant year on year increase, while the number of GreenPalm certificates purchased in the UK showed a smaller increase since 2009. Please comment based on your experience on what you think may be driving these trends.
	Baseline import data - your views
8	Which import figures (FEDIOL, Oil World, or other data source) best reflect your experience?
9	What is your experience of the demand of (sustainable) palm and palm kernel oil in the UK?
	Meeting the 2015 Commitment
10	Did your sector or trade association members source 100% CSPO by the end of 2015?
11	If not, what were the main obstacles to sourcing 100% CSPO?
12	What actions can the private sector, NGO's, and the government take to support progress towards sourcing 100% credibly certified sustainable palm oil?
13	Has your sector or trade association set a new target moving forward?
14	If you did not reach 100%, how will you communicate this to your stakeholders?
15	Please feel free to make any additional comments you would like.

Annex 3. Summary of Stakeholder Survey results

The Stakeholder Survey was sent to 51 stakeholders from 40 organisations, including all major trade associations. Out of the 51 stakeholders contacted, 6 responded. Many respondents skipped several questions.

Reviewing the 2009 baseline estimate of sustainable palm and palm kernel oil in the UK

The Defra research report (2011) estimated that in 2009 the consumption of sustainable palm and palm kernel oil in the UK was equivalent to 155,000 metric tonnes or 24% of total UK imports.

1. Do you agree or disagree with the Defra research report estimate for 2009 that the equivalent of 155,000 metric tonnes of sustainable palm oil were consumed in the UK (24% of UK imports)?	
Agree	Disagree (please comment below)
2 (50%)	2 (50%)
• Would query whether this was physical oil or green certs. • I do not see that the certified supply chain is in place to verify these statistics.	

CPET methodology for 2012 analysis

As an indicator for the consumption of sustainable palm oil in the UK this analysis has focused on the import and supply of RSPO mass balance or segregated Certified Sustainable Palm Oil (excluding derivatives and finished goods) by UK refineries and accounted for by GreenPalm certificates by UK based companies.

This has been supplemented by RSPO ACOP figures on UK retail and manufacturing for additional commentary on progress on the sustainable consumption of palm oil in the UK.

Total volumes of UK imports of palm and palm kernel oil have been gathered from the following two data sources: 1) FEDIOL (representing the EU vegetable oil and protein meal Industry) and 2) Oil World (the independent forecasting service for oilseeds, oils and meals). Both FEDIOL and Oil World use trade data and have generated significantly different figures.

2. Do you have any comments on the method CPET used?
• The FEDIOL figures will be more accurate as are taken later and are based

on official Eurostat data. We think FEDIOL data should be used.

- If the two figures are significantly different, how do you know which one to trust?
- Excluding derivatives and finished goods it ignores what is probably the majority of palm oil coming into the UK. I would also ask how much of the palm coming coming into UK refineries is then exported and should be excluded from UK consumption data.

3. Do you have any comment on potential non-refinery imports we should include in our analysis?
• It is difficult but it would be better to include imports both as packaged/bulk oil and in food products. • Crude palm oil is used in animal feed blends – how is this accounted for?

4. Do you have any general comment on the use of Oil World and FEDIOL as data sources?
• As previously said, The FEDIOL figures will be more accurate as are taken later and are based on official Eurostat data. We think FEDIOL data should be used. • As above point 2

5. Do you have any comment on other trade data sources that should be considered during the analysis?
• DfT RTFO returns

6. Do you agree or disagree with the estimate that in 2015 approximately 326,033 metric tonnes of UK imports of palm and palm kernel oil were sustainable through mass balance or segregated Certified Sustainable Palm Oil, and 131,261 metric tonnes were sustainable as accounted for by GreenPalm certificates?

Agree	Disagree (please comment below)
2 (50%)	2 (50%)

- Difficult to quantify when two sources are very different in reporting output
- Again I do not see how this data can be verified. It is only MB or SG when passed through a fully certified supply chain. This figure would imply that

almost all RSPO certified organisations in the UK would be handling over 500 tonnes each. This is not the case as can be seen by how few need to complete ACOP's

7. The preliminary findings indicate that volumes of mass balance and segregated Certified Sustainable Palm Oil showed a significant year on year increase, while the number of GreenPalm certificates purchased in the UK showed a smaller increase since 2009. Please comment based on your experience on what you think may be driving these trends.	
Companies switching from GreenPalm to MB or SG	**Reformulation of products**
5 (100%)	1 (20%) (additional response)

- Physical oil is now much more available than it was in 2009 and companies have a desire to use sustainable palm oil if available as an option rather than support through Green Certs.
- We organised a major retailers annual survey and have seen a big shift towards SG and away from MB

8. Which import figures (FEDIOL, Oil World, or other data source) best reflect your experience?		
FEDIOL	**Oil World**	**Other data sources**
2 (50%)	1 (25%)	1 (25%)

- It is based on official (Eurostat) data and is taken at a later timepoint.
- I do not believe (as mentioned previously) that anywhere near this volume is verifiable as certified. Whilst these numbers may be correct they may well be incorrect.

9. **What is your experience of the demand of (sustainable) palm and palm kernel oil in the UK?**

- Significant growth but still poor demand from food service, public procurement and feed sectors
- Strong drive from private label producers and therefore retailers. No foodservice movement.
- Increasing all the time throughout all sectors, ie, retail, food, feed
- Very slow increase post 2015

10. **Did your sector or trade association members source 100% CSPO by the end of**

2015?
• Our sector were in a position to source 100% CSPO by end 2015; some challenges remained for PKO and fractions. • Yes • Yes

11. **If not, what were the main obstacles to sourcing 100% CSPO?**
• Lack of demand particularly form public procurement and foodservice. Some supply glitches for PKO and fractions. • Availability of fractions and PK • Availability of affordable fractions of palm oil as sustainable

12. **What actions can the private sector, NGO's, and the government take to support progress towards sourcing 100% credibly certified sustainable palm oil?**
• It must be possible for all public sector purchase tenders to require sustainable product. • Have policies that support the purchasing of CSPO • This must start at origin. At the moment, there is insufficient sustainable palm available to accommodate requirements (approx. 20% of annual output is RSPO certified). Work with stakeholders at origin • Keep the message simple and challenge claims. Do not just accept them simply because it is what you want to hear.

13. **Has your sector or trade association set a new target moving forward?**
• N/a we can supply 100% • No

14. **If you did not reach 100%, how will you communicate this to your stakeholders?**
• We will continue to work with our suppliers towards all Palm oil in our • We can supply 100%

15. **Please feel free to make any additional comments you would like.**