An improved picture of the UK diet

Linking production, consumption and waste data to provide a better dietary picture.

Food and diet play a major role in health and wellbeing. To combat the increasing diet-related costs to the NHS, food is increasingly the subject of new policies and regulation as well as voluntary actions by food businesses.

It is therefore of paramount importance that these policies and actions are based on firm evidence, the most fundamental data concerning what people are eating. Public data sets such as the National Diet and Nutrition Survey (NDNS) are recognized as best-practice, but as they rely on self-reporting, and are subject to significant under-reporting. As a result, our understanding of what UK citizens actually eat could be improved.

At the same time, greater amounts of consumer related data is collected, stored, analysed and shared by private organisations, including food businesses themselves. This includes data related to loyalty cards, and aggregated food sales data. For example, food product sales are reported under Producer Responsibility Obligations (Packaging Waste) Regulation to organisation such as Valpak, who collect and analyse the data to help their clients meet the regulation, covering 56% of UK retail market. Up until now that data was analysed for packaging alone, but food categories and nutrients could also be investigated.

However, when it comes to public health issues, it is the food consumption that matters, and that can be different to food sales. The main difference between the two is the amount of food that is wasted. In UK we are lucky to have world-leading data on consumer food waste, collected and administered by WRAP.

WRAP and Valpak have used their unique data sets on food sales and food waste to develop a new pilot data set to view consumption patterns in the UK. In the simplest terms this method uses sales data and subtracts food waste data to create a new proxy for food consumption data.

Our analysis compares 9 food categories of Valpak SKU database with the latest years of two publicly available data sets the Family Food survey (purchase), and National Diet and Nutrition survey (consumption) along with food purchase data from Nielsen (2015), a market research company collecting data directly from points of sales. All purchase data sets have WRAP waste data subtracted prior to presentation. The categories for

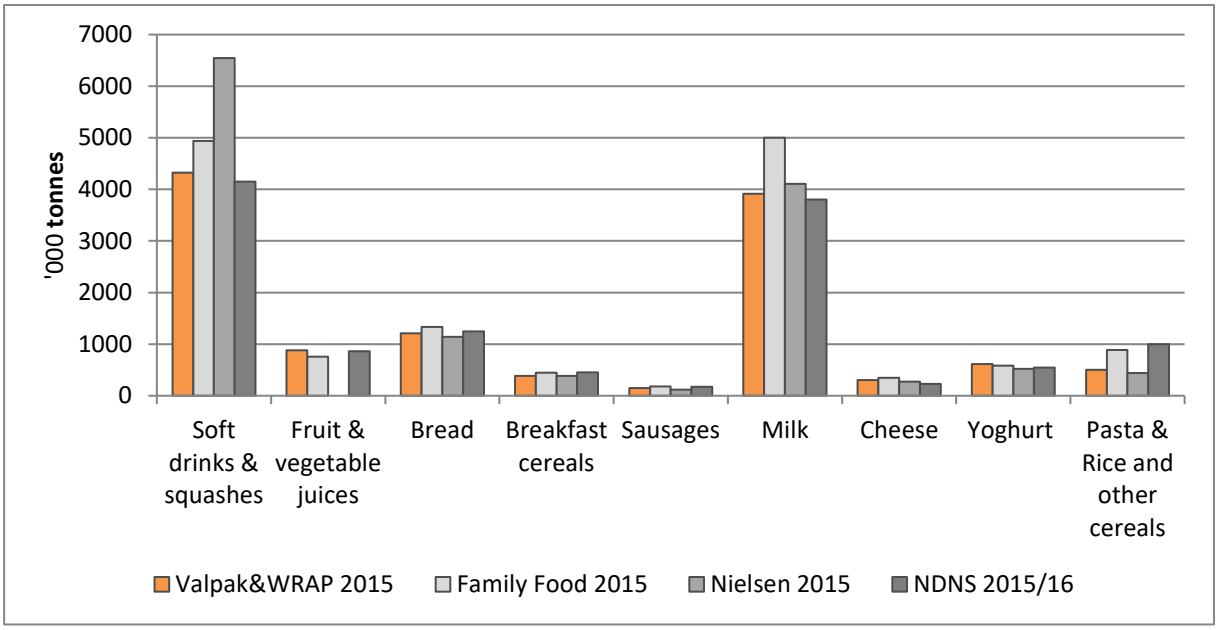
comparison are described in Table 1. Results are presented at an aggregated the food category level using edible tonnages as its base of comparison.

Preliminary results

Comparison of the four data sets show a surprising amount of alignment, although for some categories (such as soft drinks and milk), one of the data set seems to be an outlier. This could be due to different categorisations, for example we believe the Nielsen data point for Soft drinks also includes those consumed out of home, whereas the other three do not.

As shown in the table and figure below, the Valpak & WRAP data aligns with results given by the Family Food, Nielsen and NDNS. 7 out of 9 Valpak & WRAP estimates came within 20% of the average of previous estimates, and 5 out of 9 came within 10%. In cases of bigger differences in estimation between the Valpak & WRAP data and one of the other data sets, because two of three the data sets have values within 20% of the Valpak & WRAP data set, it is likely that this data set is an outlier.

Figure 1: Comparison of 2015 food purchase and food consumption data sets.



Implications

The new pilot data set from Valpak and WRAP provides a new point of triangulation with which to measure UK food consumption. While these two data sets are not perfect and would require further testing and adjustment, especially to ensure categorisations and conversions match other data sets. An advantage of this combined data set when compared to traditional survey methods is that it can be estimated and disseminated in a smaller time frame and at a lower cost than traditional survey methods, and unlike

other dietary data sets Valpak is not based on sampling, but data covering 56% of food retail purchases. With further expansion, the WRAP and Valpak data set could also be used to help retailers and manufacturers estimate the amount of different types and quantities of food they put on the market (and their related environmental impacts). In addition, it could offer a cost effective and quick method to assist with the monitoring of nutritional content (in relation for example to sugar reduction target, or vegetable consumption goals), and provide a benchmarking of sales for a specific retailer against the national average.

As food purchase data is increasingly used to underpin public health policy, it is worth noting that food waste data is also important and complimentary in understanding dietary patterns.

Further expansion of this pilot data set across all UK food categories would allow insight into the issue of under-reporting of calorie consumption. The WRAP and Valpak data set provides additional insight into this issue as it uses as its basis grocery data and bin audit data, and so should not be affected by under-reporting to the same degree as consumer purchase or consumption data.

Next steps

1. To develop comparisons of a larger number of food groups to give additional evidence of triangulation between data sets.
2. Investigate the potential of the WRAP and Valpak data set to be of use to manufacturers, NGOs, and advisory bodies to monitor nutritional content and environmental impacts of food sold and consumed in the UK. This could include monitoring sugar and vegetable consumption.

If you are interested in working with WRAP and Valpak to develop additional food group comparisons or you think you have a use for this as a method of monitoring diet WRAP would encourage interested parties to get in touch.

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