

This is evidence collated by Dr Clare Pettinger but with the assistance of members of the Food Plymouth partnership

- I) What are the key causes of food insecurity in the UK? Can you outline any significant trends in food insecurity in the UK? To what extent (and why) have these challenges persisted over a number of years?

The main two issues/causes are ECONOMIC and SOCIAL

The re-emergence of 'hunger' as a social reality and political concern in the UK is controversial (Dowler & Lambie-Mumford, 2016). Evidence suggests that 8.4 million individuals in the UK are 'too poor to eat' (Taylor & Loopstra, 2016). 'Food poverty' hits the poorest of society hardest (Goode, 2012), with food insecurity involving a cluster of problems, with clear divergence apparent in understanding its characteristics and realities for those at risk (Hamelin et al 2009). There is no universally accepted definition of food insecurity, but the most commonly used is: "limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways (e.g. without resorting to emergency food supplies, scavenging, stealing or other coping strategies)" (Taylor and Loopstra, 2016).

The effects of food insecurity on health in the UK are worrying when we consider the extent of inadequate and unfair food access. The Trussell Trust (2019), the UK's main network of foodbanks, reports that provision of emergency food supplies is at an all-time high with 1.6 million parcels being delivered between 2018 and 2019 (and this only represents about half of the foodbanks in the UK – the other half is provided by the Independent Food Bank Network). The proportion of people accessing foodbanks and other emergency food aid providers (such as soup runs), is not a sophisticated measure of food insecurity, as it only provides a 'proxy measure'. The evidence suggests that 17 times more people may be experiencing food insecurity than actually accessing foodbanks (Taylor and Loopstra, 2016). A recent analysis of food insecurity data from UK national surveys suggests an 18% increase in food insecurity among low income adults between 2004 and 2016 and a national prevalence of over 20% (Loopstra et al., 2019). This is all supported by the recent UN rapporteur Philip Alston's report, highlighting that austerity policies have pushed families and individuals into poverty:

"Although the United Kingdom is the world's fifth largest economy, one fifth of its population (14 million people) live in poverty, and 1.5 million of them experienced destitution in 2017 (UN, 2019).

Money for food is a flexible item in the budget of low income households. This means that the quantity and quality of food purchased and consumed by families is the first to suffer at times of financial hardship such as an unexpected bill or cut in work (Conversation 2014). Financial vulnerability is a massive driver of food insecurity. Given the sensitivity of food insecurity to changes in income and employment status (Loopstra and Tarasuk, 2013; Leete and Bania, 2010) there is no doubt that the recent period of austerity and welfare reforms in the UK (Portes and Reed, 2018; de Agostini, Hills and Sutherland, 2014) has contributed to a '*crisis of food access for many households*' (Fabian Commission, 2015). Low income and benefit delays are thought to be responsible for driving increases in emergency food aid use (Burnett et al 2016) which relates to national welfare reform and benefit sanctions and roll out of universal credit. A recent Plymouth based survey has shown that food insecurity is reported to be highest among individuals claiming universal credit (and other benefits including child tax credit, support allowance, and housing benefit) Allerton et al 2019 – student dissertation accessing n=229 social housing residents (findings available on request).

However, food insecurity is more than just an economic issue, it is also driven by social determinants. We live in a multi-media global era where social isolation is an increasingly common experience for people of all ages (Krivo et al 2013, p197), regardless of social position. The many challenges of social exclusion and isolation are irrefutable, not least in terms of vulnerability, mental health issues, drug-alcohol abuse, chronic/acute health which can impact life expectancy and can lead to disempowerment, low motivation, reduced opportunity, and lack of personal support strategies and networks (Pettinger et al 2018).

LOCAL PLYMOUTH INSIGHTS (The Plymouth Soup Run) Lyndsey Withers (volunteer)

The Plymouth Soup Run, a local emergency food provider, reports serving 10,860 meals from January to May this year, a 40% increase on 2018 (Withers, 2019).

Economic poverty is a massive driver of food insecurity. The clients of the Plymouth Soup Run have diverse and complex needs, but what unites them is poverty. This impacts on their food security principally through having insufficient funds to buy food but also issues of inadequate food storage and cooking facilities in low quality housing (or none at all for homeless people). The Plymouth Soup Run has been supporting homeless and other disadvantaged people in the city for over 20 years. In recent years we have seen a steady increase in demand of 8-10% year-on-year. It is expected that over 25,000 meals will have been served by the end of 2019, being equivalent to an average of 70 per night. The number of unique individuals seen in a year is probably of the order of 1000. These are mostly single adults and thus not a complete picture of food insecurity across age groups or family structures.

2) What are some of the key ways in which diet (including food insecurity) impacts on public health? Has sufficient progress been made on tackling childhood obesity and, if not, why not?

The integral relationship between diet, health and income is well known (Caraher & Furey, 2018). Food poverty manifests itself as the dilemma of putting food on the table, alongside the long-term effects of food poverty, including the habitual consumption of poor nutritional quality foods to the extent that lower income consumers are compromising food and nutritional quality to satiate hunger. Food insecure adults are more likely to have depression and anxiety, suffer from mental health disorders due to nutritional deficiencies and inadequate nutrient intakes (Kirkpatrick and Tarasuk, 2008), and higher healthcare usage and costs than food secure adults (Tarasuk et al., 2015). Further health consequences include an increased risk of diet-related diseases, as outlined above. As an independent predictor of worsening health, food insecurity, therefore represents a real challenge for public health.

In general, the UK population does not currently consume the right balance of food recommended for either a healthy or a sustainable diet (Harland *et al* 2012). The UK *National Diet and Nutrition Survey* continues to report high consumption of free sugars, salt and saturated fat and low intake of fruit and vegetables (PHE, 2016 a, b). These data are also clearly socio-economically patterned. An 'unhealthy' dietary pattern is strongly associated, and causally linked, with a number of chronic, complex conditions, such as obesity, cardiovascular disease, some cancers and type 2 diabetes (BMA, 2016).

Economically and socially marginalised groups have been shown to make poor 'food choices' (Pettinger and Whitelaw, 2012), which are often affected by 'externally imposed limitations' (Attree, 2005) – such as poor access to healthier foods and an adverse food environment which limits food choices (e.g. high density of fast food outlets favouring high salt, fat sugar food items), making this a complex and nuanced subject area. The food experiences of harder-to-reach adults, however, vary widely with individual circumstance (Burnett et al, 2016). So, understanding the factors driving such vulnerable (socially excluded) group's eating habits is crucial (Sprake et al, 2013) to improving food practices and dietary intake, and informing health education and wellbeing, because these groups tend to have more food-related health problems than the general population (Evans and Dowler, 1999).

Obesity, which has reached pandemic levels in the UK, is known to be highly correlated with low income (Kim & von dem Knesebec, 2018) as well as higher high sugar, fat and salt intake. Obesity is a highly complex 'systemic' problem (Butland et al, 2007); factors that significantly influence obesity include genetics, behaviour, culture and the environment.

Childhood obesity continues to be an issue, and although levels have more recently plateaued, we are still seeing figures that suggest 1 in 4 reception children and 1 in 3 year 6 children are overweight or obese (NCMP, 2018). Children growing up in food insecure households have poorer health and education outcomes than children from food secure households (Kirkpatrick et al., 2010; Faught et al., 2017). Despite the recent publication of two chapters of a Childhood Obesity Strategy (Cabinet Office, 2017 and 2019), and a glut of historical obesity related guidelines and recommendations (see below NICE guidelines) there is still insufficient progress being made to tackle childhood (and adult) obesity levels, which continue to rise. This is due to the complex multi-factorial nature of obesity, which requires multi-level 'systems leadership*' strategies, which are currently not being fully realized or consistently executed.

LOCAL Plymouth Insights (Public Health Team)

Healthy life expectancy and healthy eating levels within the Plymouth population are significantly lower than the England average (Nnoaham, 2015). Within Plymouth there is a strong strategic focus on priorities which relate to health inequalities, the Thrive Plymouth programme in

particular gives us a very strong hook on which to place many policies that relate to obesity.
<https://www.plymouth.gov.uk/publichealth/thriveplymouth/aboutthriveplymouth>

The most recent focus of the Thrive Plymouth 10 year Inequalities programme (year five) was 'People connecting through food' which saw Public Health work very closely with Food Plymouth partnership to build cross-sector activities to support better food (and nutrition) across the city
<https://www.plymouth.gov.uk/publichealth/thriveplymouth/peopleconnectingthroughfood>

Obesity Evidence

NICE guidance

Managing overweight and obesity in adults – lifestyle weight management services (Public health guidance) <http://www.nice.org.uk/guidance/ph53>

Managing overweight and obesity in children and young people – lifestyle weight management services (Public health guidance) <http://www.nice.org.uk/guidance/ph47>

Obesity: working with local communities (Public health guidance)

<http://www.nice.org.uk/guidance/ph42>

Obesity: identification, assessment and management of overweight and obesity in children, young people and adults (CG189) <http://www.nice.org.uk/guidance/CG189>

Clinical Commissioning Policy: Complex and Specialised Obesity Surgery, NHS Commissioning Board, april 2013 <http://www.england.nhs.uk/wp-content/uploads/2013/04/a05-p-a.pdf>

Prevalence of excess weight among children

One in four (24.5%) children in Reception is overweight or obese (boys 24.5%, girls 24.6%)



One in three (33%) children in Year 6 is overweight or obese (boys 35.2%, girls 30.7%)



PLYMOUTH'S NATIONAL CHILD MEASUREMENT PROGRAMME (NCMP) REPORT 2017/18

*Local political leadership, public engagement and cross departmental working such as housing, economic and environmental regeneration, strategic planning, education, transport, children and young people's services, can present real opportunities to be innovative in our approach to addressing unhealthy weight.

3) How accessible is healthy food? What factors or barriers affect people's ability to consume a healthy diet? Do these factors affect populations living in rural and urban areas differently?

Our food system is distorted by inequalities in access (Lang, 2015) and it fails the people most in need. There is a well evidenced disparity in equality of access to healthy, sustainable and affordable food. Food access, cost and availability have been identified as important determinants of dietary choice and these are socio-economically patterned; however, the evidence for 'food deserts' in the UK remains inconclusive. A small Plymouth based study has shown differences between areas of contrasting deprivation with respect to healthy food access, cost and availability. These appeared to be more related to Food Retail Outlet type rather than deprivation alone (Williamson et al 2017).

Abundance of snack food availability in the UK is also known to influence preference for less healthy food choices (Pettinger et al 2007) which relates closely to the way that food is marketed and retailed (involving food industry partners – more on this later). Similarly, density of fast food outlets is known to influence the 'obesogenic environment' (PHE, 2018). There is also evidence of more hot food takeaways in deprived areas in the UK (Turbott et al 2018) and children who spend time in deprived neighbourhoods tend to eat more fast food and have higher BMIs. There remains, however, minimal evidence that actually quantifies the correlation between school's environment and obesity amongst pupils.

To further support the disparity issue of affordability influencing access to healthier food, the UK Government's Eatwell Guide outlines a diet that meets population nutrient needs. However, there are several indicators that low-income households in the UK may be struggling to follow the Eatwell Guide, including differential nutrient intakes and diets, increasing food bank usage, and higher childhood obesity statistics in deprived areas (Scott et al 2018).

Education is also an important issue to mention here, as it is influenced by the wider social determinants relating to (food) poverty. Awareness and knowledge of food and nutrition is one aspect of this. Contrary to popular belief, people who are experiencing food poverty are not ignorant of what they should eat as part of a healthy diet or even where to buy affordable food. The most important factor for having a healthy diet is access to affordable healthy food (Conversation 2014). Evidence shows that people do know about healthy eating (eg knowledge of 5aDay and/or 'healthier foods'), but they do not always have the (financial) means to follow healthy eating guidelines (due to low income, or family circumstances) – see Scott et al (2018).

Historical evidence has highlighted a cooking skills transition (Caraher et al, 1999) reporting on the state of cooking in England, noting that cooking skills play an important part in healthy eating as a vehicle for lower-paid people to achieve a healthy diet and is an essential life-skill. This evidence and subsequent policy review (Caraher and Seeley, 2010) led to an attempt to improve the 'cooking in schools' policy (DfE, 2014) to make it compulsory for all children, (School Food Plan, 2015) but this has not been delivered with consistency since inception. But more recent evidence suggests that if we want a food system that is fair, equitable and nourishing, we must look outside the kitchen for answers (Bowen et al 2019) because the expectations around a woman (or man)'s ability to put (healthy) food on the table is unfair and unjust. Similarly, suggesting that people are not eating healthily because of a lack of cooking skills, is highly simplistic. Often people who access emergency food aid, for example, are suffering from such extreme personal/family crises, that their circumstances prevent them from being able to cook (or they have minimal equipment to do so, e.g. in emergency housing, with no fridge or only a kettle, whereby cooking capabilities are compromised) (Provide Devon, 2019)

Food poverty in rural areas shows similar trends to urban areas (ie proxy measure indicate increased household food insecurity, particularly amongst certain population groups, such as families with young children, older adults and persons with disabilities), but the issues at play are slightly different. People living in rural areas, often have issues with transport (fuel costs) thus their physical/economic access to supermarkets/food retail outlets to purchase healthy foods becomes compromised. Similarly, rural areas have less concentrated access to emergency food aid providers (although most food banks have rural 'satellite' sites) meaning further compromise in times of urgent short term need. 'Heating or eating'? Is a question often associated with people living in rural areas when considering how to prioritise their often very tight household financial outgoings.

4) What role can local authorities play in promoting healthy eating in their local populations, especially among children and young people, and those on lower incomes? How effectively are local authorities able to fulfil their responsibilities to improve the health of people living in their areas? Are you aware of any existing local authority or education initiatives that have been particularly successful (for example, schemes around holiday hunger, providing information on healthy eating, or supporting access to sport and exercise)?

The social safety net has been badly damaged by drastic cuts to local authorities' budgets, which have eliminated many social services, reduced policing services, closed libraries in record numbers, shrunk community and youth centres and sold off public spaces and buildings. The bottom line is that much of the glue that has held British society together since the Second World War has been deliberately removed and replaced with a harsh and uncaring ethos (Caraher and Furey, 2018).

The Public Health Transition (following the public health white paper, 2010, which devolved public health services to local authorities) has partly driven these funding cuts, which has resulted in local authority driven public health delivery programmes/campaigns becoming massively compromised.

Despite this fact, Plymouth has been leading some pioneering food/health related activities, such as Thrive Plymouth 4-4-54 (see previous section Nnoaham, 2015) which has focused on 4 behaviours (diet, smoking, alcohol and physical activity) to improve health outcomes in relation to inequalities in the city. This has seen a very strong collaborative bond created between Plymouth City Council Public Health Team and Food Plymouth (the local Sustainable Food Cities award winning food partnership) to drive activities that support the promotion of healthy sustainable and affordable food.

Specific projects of note in Plymouth

Plymouth is home to a pioneering cooperative School Meals service **CATERed**

<https://www.plymouth.gov.uk/schoolseducationchildcareskillsandemployability/catered>

CATERed champions local seasonal produce from suppliers local in the region. As an official partner of Plymouth's Flavour Fest – the South West's largest foodie show, Sea Food Festival and many other events they bring free children's workshops to the city. Giving children from across the city the chance to experience new tastes and new foods, they also give them the recipes and talk to the parents about how easy these recipes can be produced at home. They produced a recipe book that is available free on loan at the local library but also can be downloaded from their website.

This year CATERed have expanded the family cookery lessons at our schools & supported schools communities by hosting lunches for the elderly residents from local homes. At these events they have ensured that the equipment used can be found in homes so making the recipes as easy as possible for families to cook together to produce home-cooked meals. More and more the cookery workshops are being held for families to attend together. This approach has increased the parents awareness of the goodness in CATERed's school cooked lunches but also how easy cooking from scratch can be and have many more benefits it brings the family.

CATERed's flagship holiday hunger project 'Ed's Summer Food Tour' has been going since 2015 and has now grown to 3 days every week in August with their partnership with Plymouth Libraries, every Tuesday and Thursdays they head out to local open spaces with freshly made meals (at least 600 per week) to give away to the children of Plymouth families and on Wednesdays they deliver 600 meals to the 12 libraries in Plymouth for their Lunch at the

Libraries events. 'Lunch at the Library' meant more families were able to feed their children for free while enjoying the great range of activities and services available through their local library.

These events would not be possible without CATERed's amazing staff giving up some of their holidays to prep, cook and serve the lunches. Catering Managers and Catering Assistants across the company feel passionately that the children they see every day during term time struggle to get meals in the holiday.

CATERed work closely with the companies they use and by phenomenal donations we receive from suppliers and others businesses so that the tour can happen. They also supported many small groups by helping them with free lunches for their free holiday activities also helping groups such as 'Transforming Plymouth Together' by giving ingredients and cooked meals that we delivered to their summer holiday clubs in August. In total CATERed produced nearly 9,000 meals in August 2018! Helping families and children from across the city. This year with all the different areas they have supported the total meals produced by CATERed during this summer is just over 19,000.

Fit and Fed

In May 2019, the government declared funding to support holiday hunger programmes across the UK to be run (a tender/competitive process was set up for cities to apply)

<https://www.gov.uk/government/news/free-meals-and-activities-for-50000-children-over-2019-summer-holidays>

Plymouth successfully secured funding via this award to run a series of holiday hunger activities across the city. 'Fit and Fed' has run this summer (2019) supporting families around healthy eating and engagement in sport activities <https://www.plymouthssp.co.uk/news/21141/pcc-fit-fed-holiday-programme> and an evaluation of this programme will follow the work undertaken and should be available early next year.

5) What can be learnt from food banks and other charitable responses to hunger? What role should they play?

There is nothing more fundamental and emotive than food, nothing more undignified as not having access to what your neighbour has because you cannot afford or access it and/or having to access it through charity (Caraher and Furey, 2018). Although providing an essential response to short term crises, delivery of emergency food aid does little to tackle the underlying causes of food poverty and insecurity, at best it helps about one or two out of the ten who are food insecure (Loopstra and Lalor, 2017). Users of Food Banks have been shown to be disproportionately low income, vulnerable and disadvantaged with the majority of users suffering from benefit-related problems or in low income jobs (Prayogo et al, 2017). Although there are suggestions emerging that the clients using foodbanks are more diverse than this (accurate data is currently unavailable).

Charities should not be expected to fill a gap not currently being met by government. The fundamental social issues around poverty need to be urgently addressed (at systems/political level). There is a danger that if we become too used to foodbanks being part of the solution that in the UK we will see a similar picture to what is seen in the US. The 'institutionalization' of food banks is highly political and food security expert Andy Fisher has written about this detail <https://www.bighunger.org/> showing the sinister side of food corporations 'sponsoring' food poverty. This is not a positive outcome and should not be seen as a solution.

The nutritional quality of food offered by emergency food aid is known to be poor. Individuals who rely too heavily on food banks (and other emergency food aid offers) may suffer nutritional deficiencies because so much of the produce is processed rather than fresh (Guardian 2015). Trussell Trust food parcels have been nutritionally analysed and do meet most of the nutrient needs for their three-day emergency offer (Hughes and Prayogo, 2018) - although they do come out as being high in sugar (known to be detrimental to health). In Plymouth, the soup provided by the soup run is making an important contribution to the overall daily food intake and nutritional intake of service users (but would not be adequate as the only source of food) (Withers, 2019). It is donations of other food items (e.g. pasties, cakes, biscuits, crisps etc) that leads to less 'healthy' food being consumed (high salt, fat and sugar).

Emergency food aid providers serve a vital emergency (Short term) function for people in need. Their remit, however, is to meet these emergency short-term needs, not necessarily to attempt to address long-term requirements for tackling hunger and/or supporting healthy eating (although many are also engaged in activities such as cooking, budgeting etc to support their clients). Therefore, there is no onus on charities to supply healthy foods and in fact it is difficult for them to do so, since they do not necessarily have the infrastructure to storage facilities to manage perishable goods. There is a disparity between the short-term nature of the function of Food Banks and the way in which they are now being used.

Of particular note, The Trussell Trust is in the process of developing a strategic plan that will set out both their vision (to combat hunger) for the future and also their five-year plan for how they might progress towards that vision. They are calling this process 'Network for Change'. Throughout this process they are looking at the problem they're trying to address;

Plymouth insights:

Eunice Halliday (OBE) of the Plymouth Food Bank (Oasis Centre)

offering trussell trust food parcels and also offering education, skills and advice at centre
Link here: <https://plymouth.foodbank.org.uk/> 8,791 three-day emergency food supplies given to people in crisis last year

Such responses can provide an indicator of need in quantitative and qualitative terms – how many people are hungry, their demographics, foods and other products sought, and collateral needs (e.g. housing, health, financial and other advice; social connections). They can provide a source of information on trends in and drivers of food insecurity. They can provide a means of reaching people affected by food insecurity to offer them holistic support that reflects the complexity of their needs. Such responses should ideally play a role of meeting short-term needs but it is clear that some of the clientele draw on support for long periods of time. This highlights the importance of collateral support to help people achieve change towards more sustainable solutions to their needs. Charitable responses can play a key role by acting as a bridge to link clients to other appropriate services. Close collaborative working among services, such as the Plymouth Soup Run has with partners, creates the relationships that support timely and appropriate referrals and/or alerts to identify and support those in need.

I think there is a distinction between (1) Crisis and (2) Chaotic/sustained poverty. Crisis being caused by sickness, bereavement, fridge/freezer breaking down - which would result in 1 - 2 visits to the food bank. The other chaotic/sustained poverty - which is the repeat visitors attending more than 3 times in a year or regularly attending the soup run/other free/subsidised food providers. These are the just about managing people in our society.

Crisis use of the food bank will always be required as it cannot be predicted or prevented.

Chaotic/sustained poverty is the area which could be resolved by government policies, in part. This would relate to:

- reversing the benefit freeze, benefit system reacting to policy quicker for example the severe disablement premium which gvt has said will be given back to claimants and back paid a long time ago but has not been implemented.
- Benefit sanctions, PIP assessments and recoupment of ancient loans have changed vulnerable people's circumstances at a time when they are unable to withstand reduction in income. Often the sanctions are the result of the claimants own vulnerabilities such as going to A&E for an emergency and missing an appointment.
- Insecure tenancies and lack of rent control which means vulnerable people often at the mercy of unscrupulous landlords. Often these landlords don't repair their properties leading to the vulnerable tenants having out of pocket expenses such as replacing clothing or personal care items due to damp/water damage. Lack of rent control means the local housing allowance does not keep pace with rents which continue to rise meaning vulnerable people having to pay top up rents from the money intended for food.
- Young persons lower rate of benefits when they are not protected from higher rents and bills
- Poverty premium - people of lower disposable incomes having to pay for the privilege of paying bills monthly.
- Debt/finances and the way people are able to get into financial difficulties so easily. For example not allowing Brighthouse/Wonga etc.
- Homelessness, rise in homelessness is coming from universal credit 5 week delay alongside the reduction in support services for mental health. Many mortgage lenders and renters insurance companies make it a requirement that buy to let owners do not rent to benefit receivers making it difficult to find housing if you are on low income. In addition the change to universal credit means a much larger section of the low income population will be classified as on benefits.

- Job market - zero hours contract and poor working conditions, the big supermarkets and gradually making it more and more difficult to work there. They will say they are paying the minimum wage but they have achieved this by reducing the quality of working conditions i.e. removing night shift premium, removing staff benefits packages.

What I would say is that there is no typical person who comes into the Food Bank. In my experience some people coming into the food bank would say they haven't eaten for several days but in reality they have consumed a few calories through sugary drinks or small snacks. What they actually mean is they haven't had a 'meal' or access to a meal for several days. Sometimes they have some food in the cupboard but they don't have a range of cupboard - i.e. they have some cereal in the cupboard but might not have any dairy, meat, fish or fresh food.

In terms of people donating to Food banks, what do they get out of it? I believe that people want to help their local community because they no longer know which of their neighbours might be struggling, and for all of us we are only two pay checks away from being in difficulty. This makes people want to ensure food banks continue to survive, but many would wish that the government would stop using them as an alternative to taking action themselves on the issues listed above.

Organisations like to collect food rather than money, it can be easier to handle at an event. It is also more photogenic for facebook etc.

In terms of what role should the Food Banks play?

Surplus food use - the Trussell trust food banks are set up on the basis that they are only going to deal with ambient stable food. This is based on a nutritionally balanced diet, assessed by a dietician and you can have a healthy diet from the food supplied. However small amounts of fresh food such as bakery and fruit & veg are good for people's diets. Therefore Food Banks shouldn't be expected to be a dumping ground for waste food but can have a role in ensuring good quality surplus food isn't going to landfill, and a wider ranged diet is available to those in need.

Food banks and other food providers need to be supported by the food system - i.e. within Plymouth we are considering a food hub where donations of fresh surplus domestic food could be handled in a hygienic/legal way to allow them to reenter the food chain. We also have DCFA (Devon and Cornwall Food Action) and they are working with Fareshare to handle this from a commercial perspective. The use of surplus allotment or garden produce could be facilitated by this food hub.

Some food banks run healthy cooking courses and budgeting courses to help people move towards cooking their own food.

In my opinion this is where the government could have an impact on food insecurity and the way the food system enables or disables people from accessing food.

6) What impact do food production processes (including product formulation, portion size, packaging and labelling) have on consumers dietary choices and does this differ across income groups?

It is widely recognised that the environment in which we live affects many of our food-related decisions, often unconsciously (Butland et al, 2007), and that the obesogenic environment is likely to have a disproportionately greater impact on those who are deprived (PHE, 2017).

‘Portion distortion’ is well evidenced as being an important driver determining poorer food choices, and the sizes of portions have increased over the years in parallel with rises in overweight and obesity (Young & Nestle, 2007). This is particularly the case for fast food companies, but also food retailers, who offer clever marketing (eg BOGOF). Consumers are at the mercy of the advertising and marketing bodies and much has been written about the manner in which marketing is done (favouring ‘bottom line’ over human health). To those on low incomes and/or with poor food and health literacy, large portion sizes appear to be better value for money. It has been estimated that such upselling can result in the average person consuming an additional 17,000 calories per year (RSPH & Slimming World, 2018). The use of reduced portion sizes to influence health has been identified as an effective method for reducing overall calorie consumption (Marteau et al 2015) although more research is needed on the mechanisms at play.

Food labels are not necessarily used and understood in the same way by all groups. There is evidence that their use is greater among those with an already greater interest in food and health (Grunert et al, 2010). There are issues with lack of consistency around labelling (eg traffic light system) and their adoption by different food producers. This causes issues with interpretation, particularly affecting those lower income consumers, who might have literacy issues.

Food packaging is also a real issue, especially in light of the recent drive to reduce single use plastic (climate emergency). Consumers, particularly those on lower income who have no control over their choices, are at the mercy of food retailers to take responsibility to reduce their single use plastic use in food products. This needs more radical legislative guidance so that consumers can be supported in their shopping practices.

Product reformulation is about altering a food so that its nutritional profile (especially macro-nutrients) is altered without the need for an individual changing their food behaviours. It does not rely on individual behaviour change (which is evidenced to be very difficult to achieve and maintain). Some suggest that reformulation is the only feasible approach because behaviour change interventions are ineffective (Winkler, 2018) but with foods it is technically difficult. An example of a current reformulation programme is ‘sugar’, organised by Public Health England (PHE, 2018b). This programme has already been estimated to have achieved approximately 2% reduction of sugar in its first year, less than the stated aim of achieving a 5% reduction in that timescale (PHE, 2018b). PHE is working on other reformulation programmes (eg salt) and has (controversially) set up a calorie reduction programmes as part of their ‘whole systems’ approach to obesity (<https://publichealthmatters.blog.gov.uk/2019/07/25/health-matters-whole-systems-approach-to-obesity/>). However, reformulation should be one part of a large scale systemic approaches, one that is more holistic, and includes upstream measures around sustainability and food security, and the role of all aspects of the food supply chain, not just those of the retailer, manufacturer, retailer or consumer.

7) What impact do food outlets (including supermarkets, delivery services, or fast food outlets) have on the average UK diet? How important are factors such as advertising, packaging, or product placement in influencing consumer choice, particularly for those in lower income groups?

Food outlets hold enormous power within the food retail chain, whether over food manufacturers, producers and/or food consumers.

Influences on food choices are many and varied (Pettinger et al 2004) and the obesogenic environment itself is complex and hard to define (Kirk et al, 2010). We know food preferences and resulting overweight and obesity levels are higher in children from poorer neighbourhoods, and it is concerning to see more fast food outlets on average in many of these deprived areas (Tedstone, 2015). But the causal pathway between overweight and density of fast food outlets is still contested in the literature (Mackenbach et al 2018; Turbott et al 2018) so more research is needed.

Price promotions have been shown to influence quantities of foods and drinks purchased which are not offset on subsequent occasions (Martin et al, 2017; Hawkes, 2009). Likewise, the positioning of products within the retail environment (e.g. point of purchase and end-of-aisle placement) has been linked to greater sales, particularly for high fat salt and sugar foods and drinks (Martin et al, 2017; Cohen & Lesser, 2016; Hawkes, 2009). There is no doubt that the food environment, (which includes marketing, advertising and promotions), influences us in our food choice behaviours (Butland et al, 2007), and this influence can potentially be modified by stronger and more radical political leadership in the form of legislation around marketing and advertising.

8) Do you have any comment to make on how the food industry might be encouraged to do more to support or promote healthy and sustainable diets? Is Government regulation an effective driver of change in this respect?

Yes – regulation (but in the form of more radical legislation) is badly needed. The food industry need to be taking more responsibility for promoting healthy and sustainable diets, even if this compromises their 'bottom line'! There needs to be a (transformative) culture and mindset change, however, one that favours health and the planet. This is not an easy feat! It is now well evidenced that the Public Health Responsibility Deal (which was a voluntary process) was ineffective (Knai et al, 2018), due to the complexity of the system(s) involved, suggesting that reliance on voluntary agreements alone is likely to have limited impact.

There have been some successes where mandatory actions already taken have been shown to be effective. The recently imposed levy on sugary drinks, for example, has resulted in an 11% reduction in sugar per 100mls (manufacturer branded products & retailers own products only). This compares with a 2% reduction in sugar per 100g in manufacturer branded and retailers own brand products in the first year of the voluntary sugar reformulation programme (PHE, 2018b). Planning regulations around newly emerging fast food/take away outlets in city centres also needs work, and evidence is often contested on the value of this (sending the wrong message to consumers!)

Ideally food needs urgent attention in relation to regulation. Debates still exist around whether tax/levies are appropriate, however, as they can be regressive (thus affecting poorer people relatively, who pick up the cost). Strong (collaborative) leadership is required around regulation, that will also permit it to be aligned with subsidies on healthy options like fruits and vegetables, thus reducing their cost.

9) To what extent is it possible for the UK to be self-sufficient in producing healthy, affordable food that supports good population health, in a way that is also environmentally sustainable?

If unchecked, it is predicted that by 2050 current dietary trends will cause significant damage to the environment (*e.g.* biodiversity loss and increased pollution), as well as increased ill health (*i.e.* higher prevalence of chronic non-communicable disease). The implementation of solutions to address the tightly linked 'diet–environment–health' trilemma is, therefore, a pressing global challenge (Tilman & Clark 2014).

There is increasing food demand for the growing human population, from an already challenged food system that is stressed by the degradation of global ecosystems (Frey & Barrett 2007). The UK has a target to reduce GHGe by 80% from 1990 levels by 2050 (UK Government 2008). Government has also recognised the pressure on the availability of water for use in agriculture and the need to reduce this impact (DEFRA 2006). Optimising land use for food production, such as reducing the amount of land required for the rearing of meat, would have a positive environmental impact in a range of ways. In order to achieve climate change–related targets, and mitigate the harsh effects of climate change, agriculture and food production methods need to change, as well as dietary intake patterns (Bajzelj *et al.* 2014; MacDiarmid *et al.* 2012).

It is suggested that a more sustainable diet can be achieved by reducing meat (red and processed meat in particular) and dairy products in the diet, and replacing these with appropriate plant-based proteins, such as beans and pulses, and plant-based dairy alternatives; an eating pattern that aligns with recommendations in the Eatwell Guide (PHE 2016). There is growing evidence of the link between the consumption of large amounts of red and processed meat and poor health outcomes (Cross *et al.* 2007; Kontogianni *et al.* 2008)). This may be related to the high saturated fat content of animal products, high salt levels in processed meats and to the displacement of fruit and vegetables and cereals by high meat consumption (Scarborough *et al.* 2012). There are, of course, important nutritional implications for meat reduction, such as potential mineral (*e.g.* iron or zinc) depletion (Millward & Garnett 2010), highlighting the need for nutrition professionals in advising on dietary changes (BDA, 2018).

An extensive discussion paper by Garnett (2014) argues that a sustainable *and* healthy diet is possible, and that low environmental impact dietary patterns can be consistent with good health and dietary recommendations. Analysis by the Carbon Trust concluded that the dietary pattern recommended by the Eatwell Guide now 'shows an appreciably lower environmental impact than the current UK diet' (Carbon Trust 2016). The UK, therefore, needs to shift its focus from livestock and dairy production, in favour of more plant based commodities.

One Blue Dot (BDA, 2018) is a practical toolkit that has been co-designed to support (nutrition) health professionals to help consumers make healthier and more sustainable food choices. But delivery of such large-scale dietary change requires a cultural mind-set change that goes beyond what is possible at individual behaviour change level.

'Self-sufficiency' – what does this mean? In light of the UK's potentially leaving the EU (31 Oct 2019?) the political climate is fairly urgent in relation to food and our situation in the UK. According to a series of recent briefings, Brexit represents the biggest shake-up of the British food supply since the Second World War. It has been seen to present both threats and opportunities, and not surprisingly, therefore, it has prompted prodigious activity among 'policy influencers' (FRC, 2018-19). It is presently uncertain what is going to happen in terms of farming, agriculture and production of national food items. But what is clear is that in order to achieve a more stable and less 'unequal' food system consultations need to occur across the different levels of the food chain. This is presently being attempted via the National Food Strategy review (2019), so there is a hope that things might change moving into the future... ..

10) Can efforts to improve food production sustainability simultaneously offer solutions to improving food insecurity and dietary health in the UK?

We need to be considering a food system that is based on values where individual health, the health of the society (social system) and ecosystem health are of equal importance (Carlsson et al 2019). Such as “systems perspective” helps to see and articulate food systems as a complex network of actors and factors (Norberg and Cumming, 2008) interacting with the three ‘sustainability domains’. Thus, the implicit values at stake are that we nourish our populations in a way that does not compromise future generations, so there is a clear need for solutions to more sustainable production of food in the UK to reflect the interrelationship between human diets and the environmental, social and economic impacts of such diets. This is a ‘Right to Food’ issue

So, people, as active citizens, need to be consulted along the way, at each stage of the process. Creative approaches to reach traditionally marginalized communities can engagement (Pettinger et al 2017, Flint et al 2017) by fostering, empowerment, connection and a sense of agency and equity. This can lead to improved health outcomes, and wellbeing, life-skills etc). See final section of this evidence.

11) How effective are any current measures operated or assisted by Government, local authorities, or others to minimise food waste? What further action is required to minimise food waste?

Waste/surplus distribution is NOT a solution to food insecurity problems, this is a false claim that can lead to increases in inequality and loss of dignity (Caraher and Furey 2018)

Food waste needs to be tackled at all stages of the food chain, from farm to fork. There are many charities who operate to re-distribute waste/surplus food to those in need within the food system. For example, FareShare UK operate nationally to make use of surplus and waste food. More locally, The Devon and Cornwall Food Action (<https://devonandcornwallfoodaction.org/>) group receive surplus (end of shelf-life) food that is re-distributed at a reasonably large scale to charities. But commodity flow is inconsistent (presenting difficulties for charities to manage donations)

Local Plymouth insight (activities for food waste prevention)

- Devon and Cornwall Food Association (DCFA) – Charitable redistribution of food.
- The Real Junk Food project – using surplus food and producing pay as you feel café offer
- Billy Ruffian's – Plymouth's new community owned craft brewery – which will be using waste products from craft bread making in its brewing processes.
- Plymouth Food Waste Partnership's Food Waste collection for Plymouth proposals (Plymouth currently has no food waste collection) This started with proposed 'Pedal Bins' commercial food waste collection scheme using electrically assisted cargo bikes on the Barbican – this includes international links with Scandinavia.
- Food Plymouth is working towards Sustainable Food Cities 'Lowering the Eco-Footprint of the Food System' action
- Composting workshops at Union Corner featuring Nicky Scott and Devon Composting Network.

Soup Run teams benefit from food donations mainly from supermarkets and food outlets, plus some via intermediary distributors of surplus food. The Soup Run depends on voluntary effort to collect surplus food, often with tight time windows for collection and uncertain levels of supply. This can create problems in predicting and managing donations as part of the total food provision on any one occasion. What would really help would be a central depot in the city, where all food surplus/waste were taken. This would provide a single place to collect, cutting down on journeys and facilitating planning to make the best use of the limited funds that we have to buy produce to achieve our aim of some balance in the food provided to our clients. However, since we operate on a very tight budget based on donations, a charge for such a service would be problematic.

12) A Public Health England report has concluded that “considerable and largely unprecedented” dietary shifts are required to meet Government guidance on healthy diets.² What policy approaches (for example, fiscal or regulatory measures, voluntary guidelines, or attempts to change individual or population behaviour through information and education) would most effectively enable this? What role could public procurement play in improving dietary behaviours?

Food is such a complex topic but strong evidence exists that UK population does not meet the does right balance of food recommended for either a healthy or a sustainable diet (Harland *et al.* 2012).

Mandatory action, despite being criticised as ‘nanny state’ is needed to produce change. For example, in the recent #notforchildren campaign (which attempted to mandate against the sale of energy drinks to children under 16 or 18yrs) the population agreed that action was appropriate (% of respondents agreed with mandating against the sale of energy drinks to children in a recent consultation (Department of Health & Social Care, 2019). Given that both poor diet and many chronic diseases are over-represented in those who are deprived, it is likely that they will disproportionately benefit from any such mandatory action - this is responsible government ensuring that the most vulnerable are protected.

Transparency, integrity, economy, openness, fairness, competition and accountability are some of the fundamental principles (and potential values) of public procurement which are useful to consider for improving dietary behaviours. There is a need however, for governments at all levels, review their food procurement strategies (Smith et al 2015) to explore more consistent definitions for greener and more sustainable public procurement practices. Public procurement policies represents an important route towards helping employees achieve a healthy intake. The public sector is a major national employer; as of March 2019, 16.5% of all people in paid work were employed in the public sector with the NHS and the Civil Service being the largest employers (ONS, 2019b). These organisations therefore have power to influence the health and wellbeing of their employees and users including through healthy food procurement as well as addressing sedentary behaviours and embedding opportunities for physical activity.

Local Plymouth insights

In Plymouth we have taken a strategic approach to the procurement of food by public organisations. We are also about to sign the healthy weight declaration which contains guidance on public procurement of food.

13) Has sufficient research been conducted to provide a robust analysis of the links between poverty, food insecurity, health inequalities and the sustainability of food production? How well is existing research on the impact of existing food policy used to inform decision making?

No from my own personal knowledge of the literature (which is extensive), although each of these elements has some robust research, there is a paucity that provides a robust enough analysis of the links between poverty, food insecurity, health inequalities and the sustainability of food production. More funding and capacity is needed, therefore, to support these research developments.

Similarly, I do not believe that existing research on the impact of food policy is considered appropriately to inform decision making. Food is a highly complex agenda, and food systems involve a complex set of interactions that work together to influence multiple outcomes, notably health, environment, and the economy, including the livelihoods of farmers and the profitability of businesses. Food policy is therefore highly challenging because there is no one single way of collecting evidence to inform policymaking. Different approaches are appropriate for different policy issues. Food policy has great potential to inform decision making, however, despite common conflicts and contradictions which often undermine each other (Parsons and Hawkes 2018).

Converting these well-known conflicts between goals, into connections that yield co-benefits requires deeper change, in which the entire system is reoriented towards meeting health, environmental and economic goals together (collaboratively). This is known as 'integrated food policy', in which processes are designed and managed differently, which is coupled with a more values driven approach to the food system (see Carlsson et al 2019). Putting a food systems approach into practice to achieve co-benefits will require cross-government and cross-sector collaboration as well as a broader framework for enabling policy. Lawrence *et al.* (2015) showed how important food and nutrition policy activities are to the redesign of the food system needed to promote healthy and sustainable diets. Food policies also need to account for how people – citizens, communities – are affected by the food system problems we are seeking to address (Hawkes 2018).

14) What can the UK learn from food policy in other countries? Are there examples of strategies which have improved access and affordability of healthy, sustainable food across income groups?

Globally, over the past several years, dietary guidelines have been emerging that incorporate aspects of sustainability to varying degrees. Qatar, for example, produced one of the first national dietary guidelines to integrate principles of food sustainability (Seed 2015). Similarly, Sweden and Brazil have taken radical steps to embed sustainability and social drivers and determinants into their national dietary guidelines [National Food Agency (Sweden) 2015; Ministry of Health for Brazil 2014].

Also successes seen in food policy developments in Finland eg

<https://www.healthydietforhealthylife.eu/index.php/news/331-finnish-food-policy-report-food2030-finland-feeds-us-and-the-world>

Mexico has success with sugar tax evidence:

<https://www.theguardian.com/society/2017/feb/22/mexico-sugar-tax-lower-consumption-second-year-running>

Cuba has an extensive Food security policy in place <https://plataformacelac.org/en/politica/248>

In Europe there is a drive to consider sustainability of food system (influenced by Italy's slow food movement) <https://www.slowfood.com/slowsloEurope/en/topics/food-sustainability/>

15) Are there any additional changes at a national policy level that would help to ensure efforts to improve food insecurity and poor diet, and its impact on public health and the environment, are effectively coordinated, implemented and monitored?

The problems/issues are complex, and therefore solutions are complex and require multi-sector 'systems' collaboration and strong political leadership. I believe that stronger policy starts with the people – so there also needs to be more effective consultation and 'bottom up' involvement (co-production) with communities with lived experience so that their voices can form part of the policy changing and solutions.

There is evidence of the resourcefulness of people in food crisis (Douglas et al 2015). Community engagement interventions have been shown to influence health behaviours and self-efficacy (O'Mara Eves et al, 2015), with specific attention paid to social inequalities: social capital, cohesion and empowerment (Popay et al 2007).

Looking to 'bottom up' community centric initiatives are important – there is a need to tap into already existing networks to generate people powered action (already existing networks such as Sustain <https://www.sustainweb.org/> ; Food Ethics Council <https://www.foodethicscouncil.org/> ; Sustainable Food Cities network <http://sustainablefoodcities.org/> ; Food Power network <https://www.sustainweb.org/foodpower/> ; Independent Food Aid Network <http://www.foodaidnetwork.org.uk/> ; Church action on poverty www.church-poverty.org.uk ; End Hunger UK <http://endhungeruk.org/>) More creative approaches are needed that foster human connection, such approaches emphasise social action, individual justice and active participation - it is possible to 'give voice' to community members, allowing them some control over their involvement in a process of participation

Using creative arts practices to explore the inherently social dimensions of engagement with food can involve individuals in personal and community-level change through reflection, empowerment and connectedness (Gray et al, 2010). Arts based methods can reveal and give voice to a set of perspectives that are otherwise absent from research and food policy debates (Flint et al 2017). Although food is central to many health concerns, it is also a powerful 'lifestyle motivator' (Pettinger et al 2017). Creative food activities may therefore have a role to play when designing and commissioning services for individuals with multiple and complex needs. To act as a catalyst for change. More progressive solutions to social exclusion are now being sought through, for example, the 'social cooperative model' described by Villotti et al (2014). This not only addresses individual level determinants of food security and poverty (e.g. improved social abilities) but also considers wider (infra)structural factors, by offering job opportunities and skills development. Such a model fosters a 'co-production' philosophy (Slay and Robinson, 2011), seeing people as assets and tackling issues of power and transparency, which may help mitigate experiences of food insecurity (Douglas et al 2015).

There is great scope, therefore, to engage key players more effectively across the food chain, to shift the paradigm towards more relational and transformative socially inclusive food debates/action, with human connection at their heart (Cottam, 2018, p15). This is an important area of benefit, using food-based community development to enhance social and human capital and foster human connection and to facilitate a shift from a deficit to an asset-based approach (Hopkins and Rippon, 2015).

Some key policy areas for ongoing urgent action/discussion/consultation include:

- Sugar Tax
- Universal credit
- Review of food system

Minimum wage/guaranteed income

Reduced working hours

Better use of abandoned land for community food growing

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